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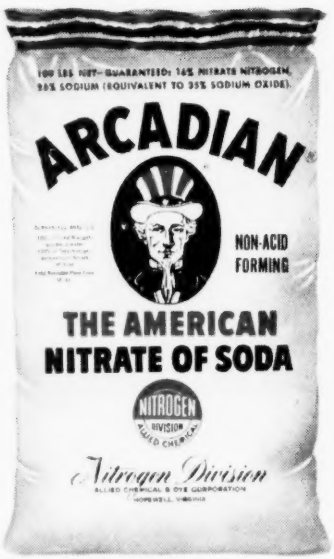

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Nitrogen Division

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•

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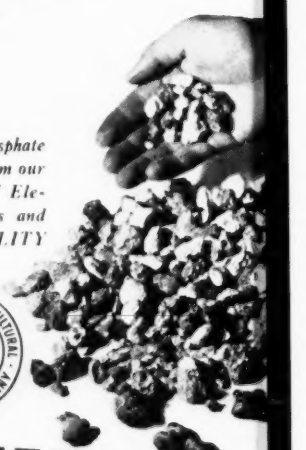

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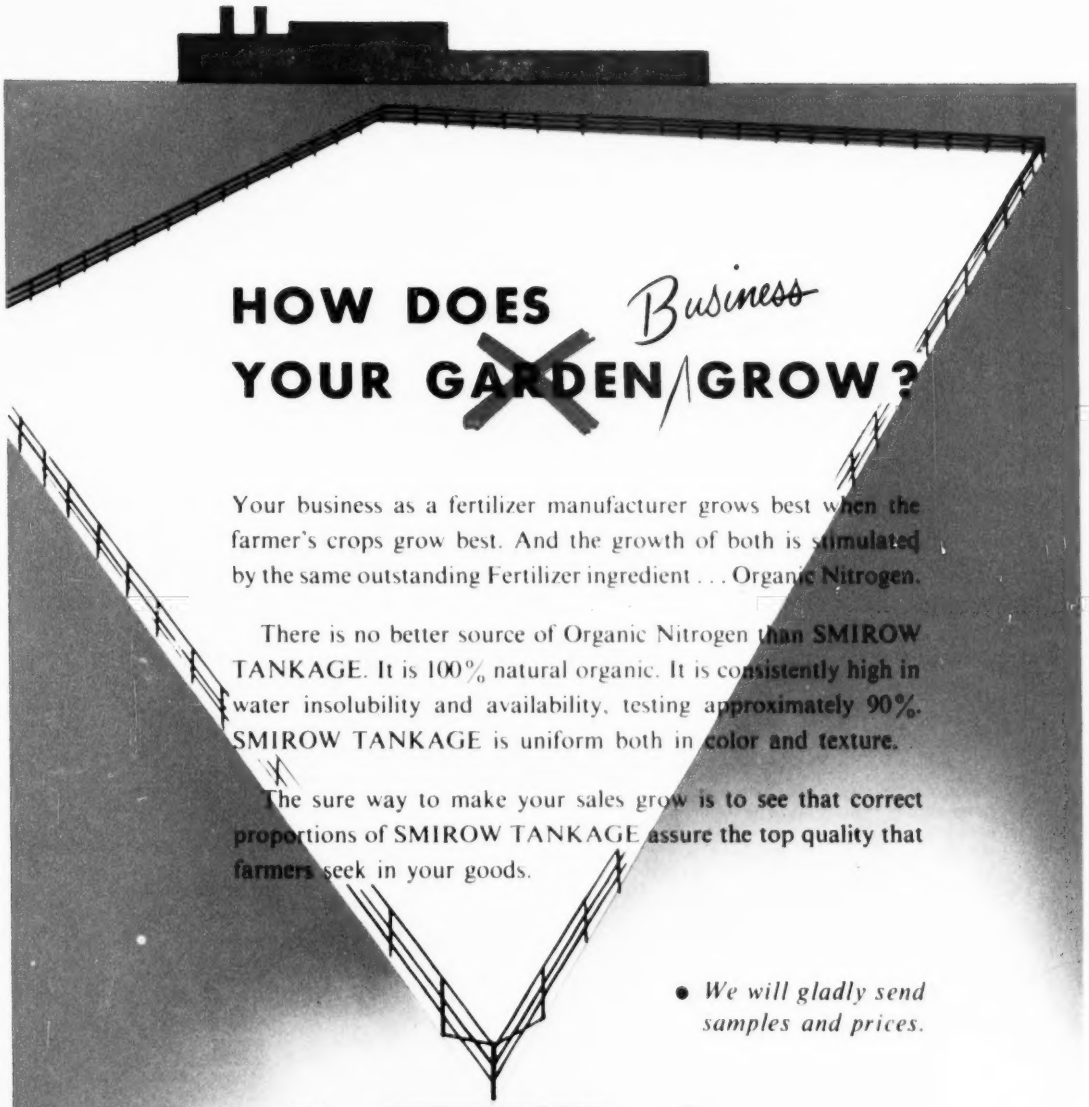

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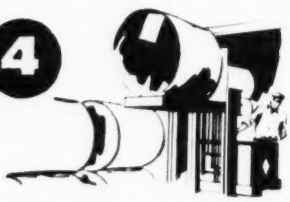

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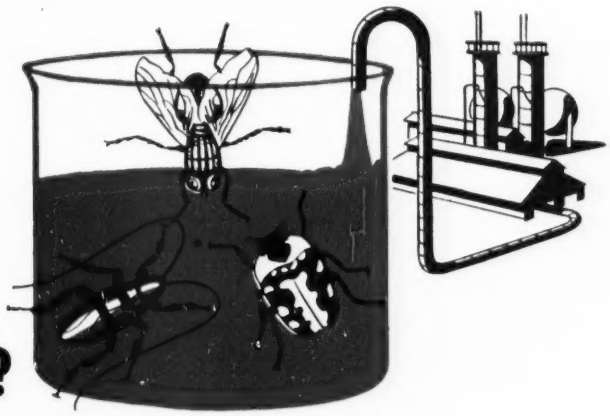
What do we know about your business?

Are you planning on Insecticide production?



Out of the progress and growth going on all over our country have come many effective pesticides and insecticides. BHC and Lindane are two of these. If you are thinking about insecticides, the Harte System can provide the know-how—from planning to profit—to design and erect your plant . . . anywhere and now.

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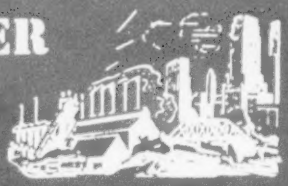


By Vernon Mount

HORSE-TRADING TIME in international circles has begun, and the US must sit in. Yet we have everything to lose, and nothing to gain. The Korean Peace Table, like all such affairs, will be a process of jockeying for power, with Russia likely to come out with a consolidation and recognition of all her territorial gains.

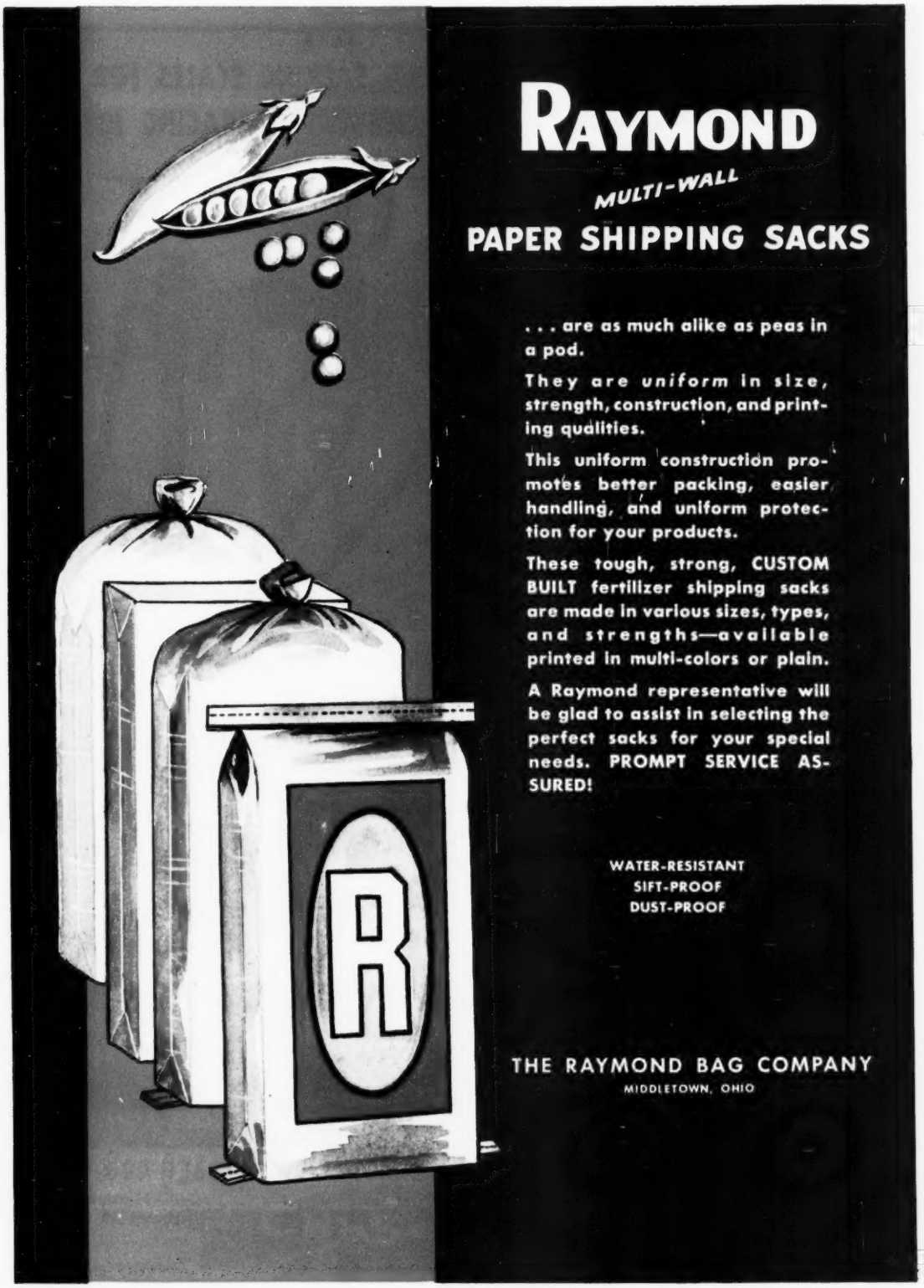
SPLIT KOREA will stay split. Our allies are thinking "Efn ye can't lick em, jine em" and we cannot depend on their UN votes when the cards are down.

BUT WE ARE COMMITTED not only to an effort to weld Korea back together, but to defend those very allies. Treaties of "mutual" defense commit us to defend more than half the world outside the Iron Curtain; plus the air bases--essential to our own defense in 23 countries--which we also must defend.

DON'T EXPECT BUDGET-BALANCING now. Russia's possession of the H-Bomb simply steps up our defense preparations. As I have said so often, Materiel is a permanent industry now, and while that is a fact a depression--or anything more than a mild and brief recession--is unthinkable. More and more, the future of this country lies in the hands of the scientific and military minds who plan the devices of defense.

Yours faithfully,

Vernon Mount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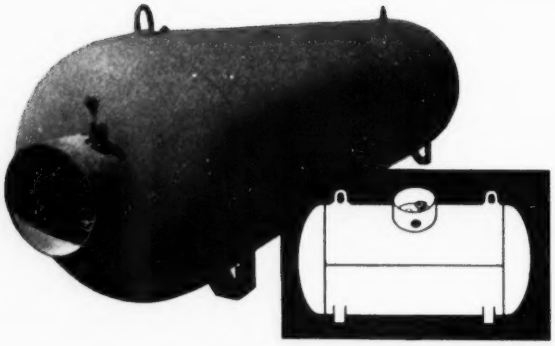

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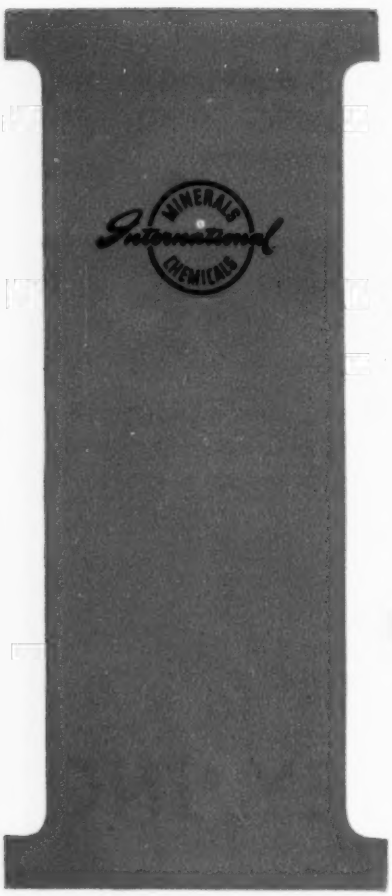

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Wheat Allotments Announced

State wheat acreage allotments for the 1954 crop as determined and announced by Secretary of Agriculture Benson:

State	*Acres*
Alabama	9,753
Arizona	22,107
Arkansas	23,166
California	561,442
Colorado	2,850,836
Connecticut	863
Delaware	50,514
Florida	226
Georgia	103,075
Idaho	1,216,909
Illinois	1,465,953
Indiana	1,319,718
Iowa	209,753
Kansas	11,874,832
Kentucky	221,393
Louisiana	827
Maine	1,713
Maryland	238,768
Massachusetts	835
Michigan	1,041,765
Minnesota	936 631
Mississippi	9,178
Missouri	1,237,559
Montana	4,603,194
Nebraska	3,659,818
Nevada	15,591
New Hampshire	103
New Jersey	63,710
New Mexico	499,084
New York	335,228
North Carolina	319,257
North Dakota	8,254 412
Ohio	1,754,468
Oklahoma	5,212,994
Oregon	865,762
Pennsylvania	721,166
Rhode Island	663
South Carolina	147,015
South Dakota	3,154,176
Tennessee	206,047
Texas	4,800,863
Utah	358,471
Vermont	308
Virginia	317,372
Washington	2,250,420
West Virginia	56,462
Wisconsin	73,077
Wyoming	324,368
Reserve	558,000
Total	62,000,000

State and county committees of the Production and Marketing Administration will then break the State allotments down to counties and to individual farms.

It Seems to Me

by BRUCE MORAN

Now that the wheat farmers have voted for the policy of acreage allotments, let us swallow for the time being our feelings about controls, and examine the effects of this voluntary choice of the farmers themselves.

Obviously it will mean more money per acre for those under the allotment, and we can depend upon USDA to be as sure as such things may be that we have enough wheat for our needs. Obviously the implement people, and others who supply the wheat farmer, will welcome this situation.

Where do we stand, as fertilizer people in the matter of reduced acreage? Just about where we have stood through all the years of Government underwriting of the farmer. The USDA has announced that it will share in the costs of seed, lime and commercial fertilizers—though the figures are not ready. But, based on past performances, NFA has made an estimate: 25 to 30 million dollars for lime: 35 to 40 million for fertilizer. This from the Government. Farmers must match it, so double the figures.

And, NFA points out, Nitrogen is no longer excluded from the APC program: the percentage of Potash is increasing.

We can feel good about it—those of us who operate in the wheat country, it seems to me.

INDUSTRY CALENDAR

Date	Organization	Place	City	State
Sept. 9-11	NAC	Essex & Sussex	Spring Lake	N. J.
Oct. 16	Control Officials	Shoreham	Washington	D. C.
Oct. 21-22	Safety	Hamilton	Chicago	Ill.
Nov. 4-5	Pacific N. W.	Harrison Hot Springs	Harrison Hot Springs	B.. C.
Nov. 9-10	CFA	La Playa	Carmel	Cal
Nov. 10-20	Crop, Soil	———	Dallas	Tex.
Nov. 16-19	NFA	Biltmore	Atlanta,	Ga.
		1954		
June 10-12	APFC	Homestead	Hot Springs	Va.
June 14-16	NFA	Greenbrier	White Sulphur	W. Va.

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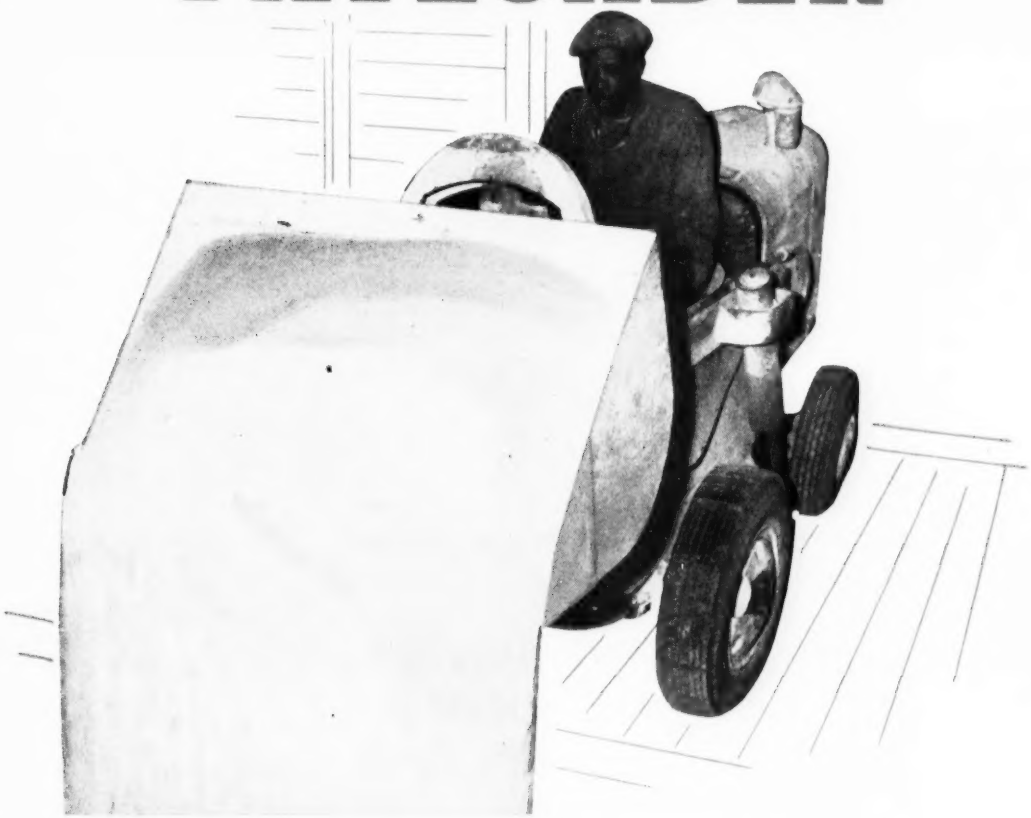

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WE COULD FEED A BILLION, FIRMAN BEAR SAYS

Many millions more Americans will be sitting down at the national dinner table within the present century; and food supply can become a problem in this land of plenty, Dr. Firman E. Bear, head of the Soils Department at the New Jersey Agricultural Experiment Station, said August 19, in an address at the Connecticut Agricultural Experiment Station's annual Field Day. Dr. Bear said that the answer to increasing population and shrinking land area per individual lay in better use of the soil and other natural resources.

To make the best use of this ever-decreasing per person acreage, Dr. Bear said, we must expand both horizontally and vertically. As our population multiplies, he said, we will have to "drain the swamps, move farther up the mountain slopes, and push farther into the desert." Drainage, irrigation, bulldozing and contour-stripcropping will make this possible, he believed. Vertically, we must increase crop yields to the limits set by the crops themselves.

As a beginning step in this direction, Dr. Bear suggested more attention to soil conservation measures, calling our present system of intensive cultivation "the most potentially destructive of agriculture ever devised by man." Increased use of cover crops, animal and green manures, and chemical fertilizers is another solution, he said. To produce high yields as the rule rather than the exception, more attention to water conservation will also be required.

The final answer, Dr. Bear concluded, will lie in the use of new sources of energy to produce our food supply. Water power, the winds, the sun, and atomic energy are all largely untapped forms. If they are used and if we improve our program of land use, Dr. Bear believed that this country would be able to feed one billion people, if the need ever arises.

What are we doing about it?

BETTER CROPS TO FEED THE HUNGRY OF THE FUTURE INCREASED POPULATION

By J. Winston Neely

Coker's Pedigreed Seed Company, Hartsville, S. C.

The amount and quality of food available to our increased population of the future depends upon our ability to produce abundant quantities of high quality crops and animals. Since animals used for human food depend largely upon crops for their feed we can say that the quantity and quality of food consumed in the future depends upon the ability of farmers to produce food and feed crops.

This fact impresses upon us the necessity of producing economic yields of high quality farm crops in abundant quantities. This can be done by the proper use of our soils, the employment of correct cultural practices, the control of insects and diseases, and the use of high yielding varieties that produce high quality products.

Let us concern ourselves at this time with the rule of improved varieties in the profitable production of high quality crops and consequently in assuring ample food for our increasing populations. The progress that has been made by plant breeders during the past half-century is truly phenomenal. In many crops yields have been not only doubled and tripled but quadrupled. Varietal resistance to insects and diseases has made profitable the growing of crops where non-resistant varieties would fail completely. The quality of food and feed produced by agricultural varieties has been markedly improved and their list of uses greatly expanded. The characteristics of many crops have been altered by plant breeding to the extent that they are better adapted to cheaper and better methods of culure, harvesting, and processing. Today our agriculture would be impoverished with the varieties of crops grown only a few years ago.

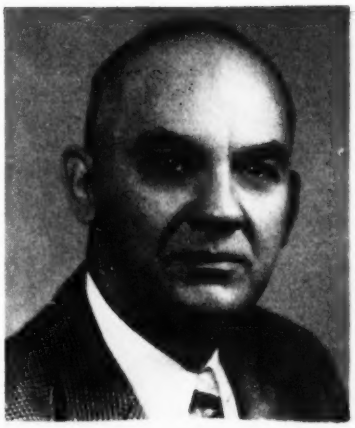
Although great progress has been made and we now have thousands of improved well-adapted, high-quality varieties much remains to be done. Plant breeders must: (1) make a wide and wise use of existing varieties, (2) maintain sufficient quantities of pure seed, and (3) continue to develop still better varieties.

There are two popular, mistaken beliefs regarding the development of improved varieties of farm crops. One of these is that they are developed through mysterious methods by wizards possessing supernatural powers. The other is that the better varieties are chance findings by breeders who lucked up on them! Neither of these concepts is true. The development of an improved agricultural variety is the result of a well planned, carefully conducted procedure in which desirable characteristics are combined into a single variety by hybridiza-

tion and selection, and established by subsequent testing. We can appropriately say that the plant breeder uses plants in much the same manner that a construction engineer uses his materials and methods.

Plant breeders have accepted the challenge to assure future populations of adequate food. Fundamental genetics and plant breeding research is supplying information on the effects of inherited factors and environmental influences upon the characteristics of food and feed crops. The quantity of food and feed produced in the coming years will be the result of many years of research and well planned breeding and testing designed and conducted to produce the very best agricultural varieties that the ingenuity and knowledge of man and the use of efficient methods and elaborate equipment can produce.

Farmers fully realize the necessity of planting varieties developed by these methods. Processors, manufacturers, and merchants require the quality that must be developed by these plant breeding procedures. If plant breeders are left free to practice their art and sciences; if private enterprise is given a free rein to develop better varieties and distribute them; and if government, industry, and labor cooperate in a democratic and christian manner our increased populations will be adequately fed by food and feed from high yielding, high quality varieties.



J. M. Eleazer

Here are some expert answers.

MALTHUS DIDN'T KNOW ABOUT WHAT IRRIGATION CAN DO

By J. M. Eleazer, Clemson, S. C. Extension Information Specialist

What tools or undeveloped potentials do we have for continuing to feed and clothe earth's growing numbers?

Over a hundred years ago the philosopher Malthus scared a lot of thinking people with his dire prediction that starvation would surely soon be the fate of humanity. For earth just couldn't much longer feed its growing millions.

Well, Malthus spoke with the light he had. And surely, with the crude agriculture of his day, it was beginning to look that way. But Malthus knew nothing of agricultural science, as has come in our day.

Better seed, better methods, fertilization, disease and insect control were not known to him. In our time the plodding scientist has dug deep into those regions. And the application of their findings has wrought miracles in the field.

I visited the Range Cattle Experiment Station at Ona, Florida. There, the year before, native range had produced 15 pounds of beef per acre. Similar land that had been touched by science (cleared, limed, fertilized, and seeded to a proper mixture of grasses and clovers produced 229.5 pounds of beef per acre that year. Now, that's about as far as science has gone with pastures here in the Southeast so far. But science is looking ahead at these stations. So a new yield potential was brought to bear on an identical area of that prepared and seeded pasture. That was **supplementary irrigation.** Then the yield of beef per acre there jumped to 1,050 pounds per acre!

Now, folks, that just about tells the story. Malthus knew only of the 15 pound potential. Along came science and applied some of its developed know-how and pushed that up to 229.5 pounds of beef per acre. Well, humanity is pleased with that, and our growing numbers are enabled to eat even better. But science sees a limit to that. So the man of test plots and charts reaches into his bag of magic and brings out another trick to try. It is a rather new one for the rainfall belt, supplementary irrigation. And ZOOM goes the yield of beef to 1,050 pounds!

And so the story goes with many things, 15, 229.5, 1,050!

Irrigation, Supplementary Irrigation! That's the one great undeveloped resource we have for again proving that Malthus was wrong. He spoke with the light he had. But, remember, his light came from a tallow candle.

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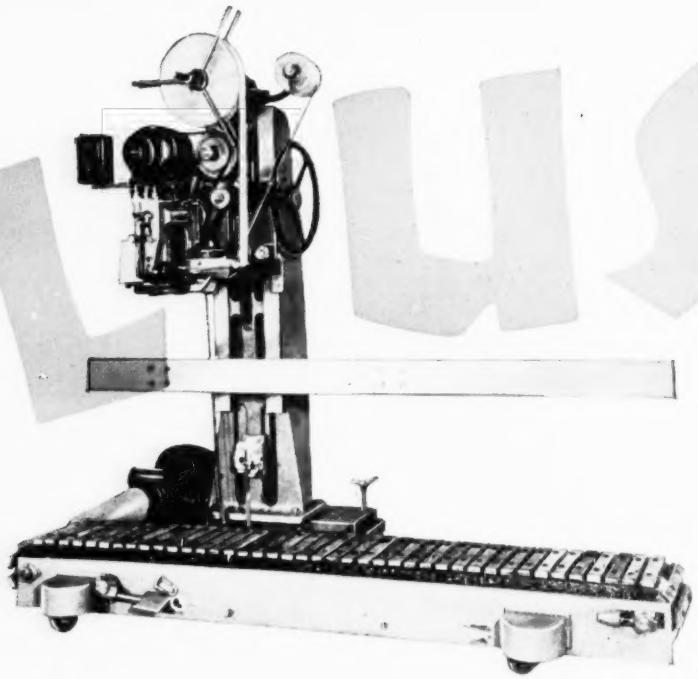

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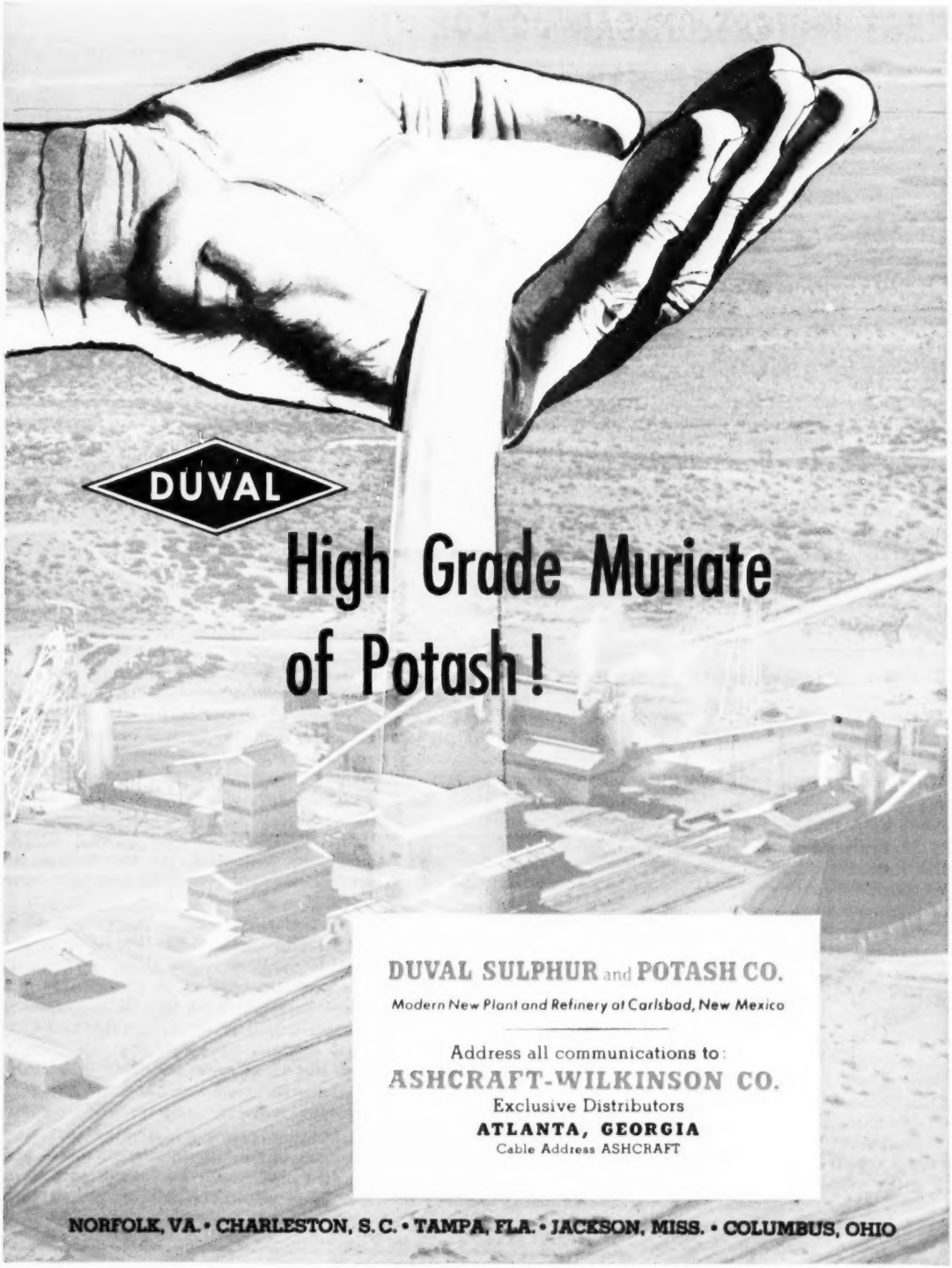
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WHAT IRRIGATION CAN DO FOR YIELD — AS DEMONSTRATED IN THE SOUTH

By Lawrence Ennis, Jr.
Alabama Polytechnic Institute

Lawrence Ennis

Today, as this is being written, the population of the United States reached 160 million, and is increasing at the rate of 7000 persons a day. In order to feed and clothe this increasing population, we will have to increase production per acre and also use many millions of acres of land that aren't being used today. Additional acres are limited to those we may bring into production by drainage or other reclamation practices. We will eventually need both additional acres and increased production per acre. Greatly increased use of supplemental irrigation in the southeast is the answer to a large part of the increased production per acre question. Today, with our knowledge of soils, seed, fertilizer, cultural practices, insect and disease control, etc., we can pretty well take all of the gamble out of extremely high production per acre except for one thing—adequate moisture when and where needed.

With an irrigation system on hand, ample moisture can be depended upon so that the farmer is free to plant more seed per acre, fertilize at an optimum rate, produce uniformly high yields per acre.

Even in a normal rainfall year, an irrigation system can be used to good advantage several times.

Just what will irrigation do for per acre yields? Research work at the Alabama Experiment Station over a 14-year period (wet years as well as dry ones) with 18 different vegetable crops showed an average increase in yields due to irrigation of about 35%. Irrigated corn in the southeast shows an increase due to irrigation of from 38 to 90 bushels per acre. Irrigated pasture provide 41 to 55 per cent more cow days of grazing than non-irrigated ones. Watering pastures even makes "Old Bossy" give from 43 to 50 per cent more milk! More food! Sure!

How about fiber to clothe people? At Auburn in 1952 irrigated cotton made an average yield of 2538 pounds of seed cotton per acre. Non-irrigated cotton averaged 1449 pounds per acre. Water was the only difference! More fiber! Sure!

What does the farmer think of all this? He's completely sold on it, especially after the drought conditions of 1951 and 1952. In Alabama, and it is probably typical of other states in the southeast, the acreage put under irrigation has practically doubled each year since 1949 and county agents report that in 1952 12,532 acres were watered artifically. Why not more? Nature has been good to us in providing so many rivers, creeks, branches, overflowing artesian wells and large springs. More of these sources of irrigation water are being utilized each year but even so, inadequate water supplies prevent a vast majority of farmers who would like to irrigate from doing so. Also, farmers in the future must have more stable prices for the things they sell. This would permit them to pay prevailing wages so they would be able to get off-the-farm labor when needed. A third but major deterrent is inadequate long-term credit. While an irrigation system is about the best insurance a farmer can have, he must think twice before tying up several thousand dollars in irrigation equipment and maybe have a wet year when he doesn't need to use it, while it must be paid for in a hurry. Such loans should be payable over a period of 5 or more years to take away the element of gamble. With adequate long-term

---

The Agricultural Research Policy Committee of the United States Department of Agriculture recently issued a report on long-term agricultural research objectives. Following is an excerpt from the report:

"According to calculations by Department officials, by 1975 we shall need the production equivalent of 115 million additional acres of crop land if we maintain current levels of living. Prospective plans for bringing in new land by irrigation, drainage and clearing add up to about 30 million acres. Land now required to feed horses and mules will add another 15 million acres. That leaves a possible deficit of 70 million acres. We might be able to provide the additional production by bringing into cultivation a large amount of marginal land. But to do so would mean high cost production and high priced food. A far wiser course would be to aim for low cost production through a vigorous research program."

The California Fertilizer Association points out that by 1975 the expected requirements of food and fiber production equivalent to 115 million additional acres can be accomplished only by increasing the production of land available for the job. Adequate fertilization and other proper cultural practices are the answer.

---

credit, more farmers are ready, willing, and able to irrigate on a broad scale and produce increasing quantities of food and fiber for a growing population. This farmer interest, our natural water resources, and crop response make supplemental irrigation look mighty promising for the future.

Irrigation from ponds and surface streams is not the complete answer, however. As irrigation becomes more general in the years to come, water shortages will develop. Research is needed on our underground water resources and on water conservation methods which will enable the soil to hold more of the rain which falls. We need to develop methods of storing water, both surface and in the soil, during periods of excess rainfall for use during dry periods; in other words, a complete water control program. Getting the answer to these questions is a tremendous challenge, for the greatest limiting factor to agricultural production in the Southeast, in my opinion, is water.

Dr. Vincent Sauchelli

FERTILIZERS AND THAT FIFTH PLATE

By VINCENT SAUCHELLI
Director, Agricultural Research
The Davison Chemical Corporation, Baltimore

Four persons are born in the United States every minute, says the U. S. Department of Agriculture. This means an increase in the population of at least 2 million a year and by 1975 our total population can conceivably be 175 million—a gain of over 38 million over the 1950 figure. Thus, according to the USDA, for every 4 persons who sat down to a meal in 1950 there will be a fifth person by 1975. How will that fifth plate be filled?

In the last years of the 18th century the Rev. Mr. Thomas Malthus somewhat pessimistically observed that unchecked population tends to increase at a faster rate than the production of food. This famous proposition has been attacked **pro** and **con** since the time it was enunciated. Events of the century and a half since Malthus have seemed to give the lie to the validity of the concept, for although population has increased at an accelerated rate, the available food supply has been kept adequate. The explanation is that during the 19th Century new agricultural lands were brought into production and vastly improved agricultural techniques were evolved to maintain relatively high yields on most crop land. This was particularly true in the newly developed countries of the Western Hemisphere. Undoubtedly, one of the most important factors of success in this struggle to feed the ever-increasing populations of the earth has been and is the world's commercial plant food industry. Man's hunger has driven him to people practically all the available good agricultural land everywhere; happily, the possibilities for increasing the sources of food and fiber supplies on these new lands by means of commercial fertilizers are still immense. Despite the progress toward efficient fertilizer usage since the turn of the century, the possibility still exists of doubling the consumption if present experiment station recommendations were to be followed. However these events may seem to disprove the Malthusian doctrine, let us remember that the old English divine had a hard core of truth in what he said: about 60 per cent of the world, reports the FAO of the United Nations, is still undernourished.

Successful agriculture in the important farm regions of this country depends on the generous use of fertilizers. In many southern states, more than half of the total crop production can be credited to fertilizers. For the country as a whole, it is estimated that fertilizers account for about 30 per cent of the total crop production. Economist E. O. Heady of Iowa says it is possible to increase acre yields of his state by 18 to 26 per cent, chiefly by means of commercial fertilizers. This is typical of most Corn Belt States. Fertilizer in the future will without question be depended upon for a steadily increasing proportion of the country's agricultural production.

How, one may ask, is the fertilizer industry planning to assume its heightened responsibility in meeting the nation's food and fiber problems? By providing new production facilities and improving the old. The industry had as of July 1951, an estimated $800 million invested in its manufacturing plants which last year produced some 22 million tons of fertilizer, estimated at a market value of one billion dollars. By 1955 it will have spent another $600 million of new capital for additional facilities capable of producing about $700 million worth of more fertilizers per year. To make this huge production program succeed will require the cooperation of all government and private educational agencies with industry's progressive merchandising techniques. The farmer and the credit agencies upon which he depends for capital will have to be made aware that in modern farming the use of proper fertilization is indispensable to profitable operation and to the conservation of soil resources. Fertilizer is a proven, effective means of cutting the crop unit cost of pro-

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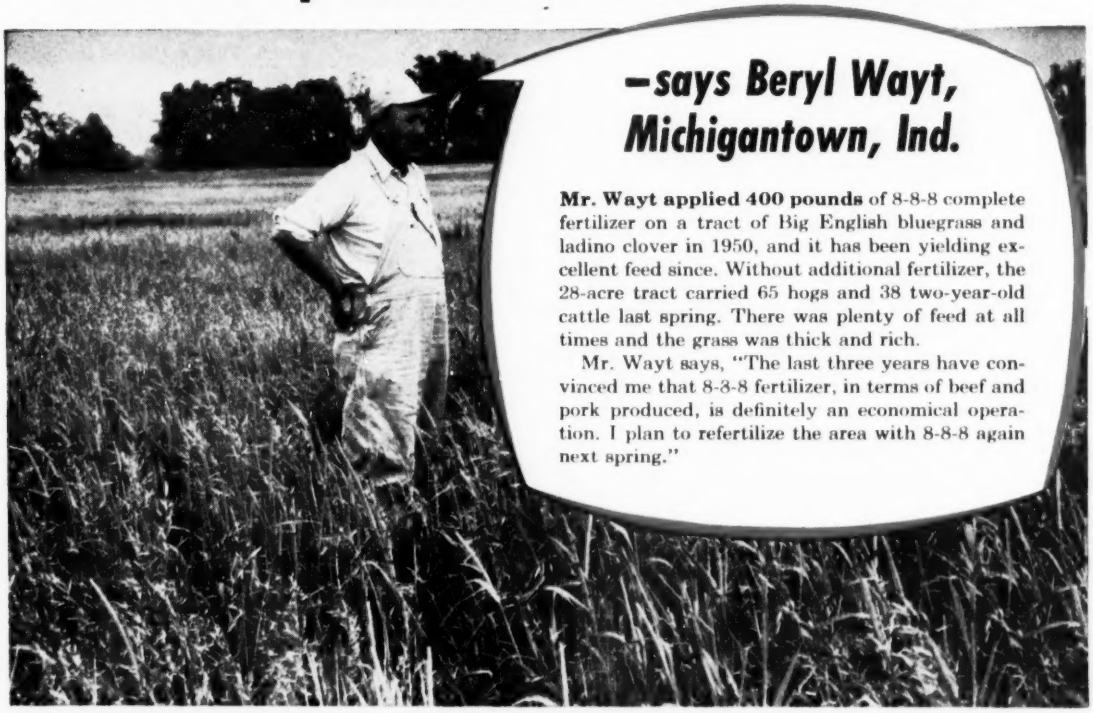

—says Beryl Wayt, Michigantown, Ind.

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duction and farmers in every region are beginning to see that optimal acre yields are one of the surest ways of keeping "above water" under all economic conditions. At present farmers, generally, are not producing at their maximum capacity. If American farmers could be made to follow their local agricultural experiment station recommendations on fertilizer rates they would increase their cash farm income substantially and current fertilizer manufacturing facilities would have to be doubled. As typical examples, it is estimated that Georgia farmers are losing about 1/4 billion dollars and Ohio farmers about 100 million annually by not following their agricultural station recommendations.

Thus, we see why we can feel optimistic about food supplies during the next 25 years. Farming is now a business and American agriculture an industry. Gone is the old pleasant sentiment linked with farming as a way of life. Agriculture is now competitive with other industries and its leaders must do some hard economic thinking if many of its products are not to be researched out of the market like tallow and butter. The chemicalization of the fertilizer industry is already well advanced and it augurs well for the nation that it is expanding and improving its production and marketing facilities to meet the new demands created by an increasing population and a higher standard of living.

G. C. Decker

PEST CONTROL AND THE FIFTH PLATE

By George C. Decker, Entomologist and Head
State Natural History Survey Division
Urbana, Illinois

Plant and animal pests rank among the foremost causes of food destruction, food deterioration and food contamination. However, there is abundant evidence that science can and has developed practical measures for the control of these pests and that these measures are being improved with each passing year. Even now pest control rightfully shares with other important technological developments credit for America's record breaking agricultural production.

The adoption of approved cultural practices, and the use of insect and disease resistant strains of plants has contributed much to our increased agricultural production. Also, for over half a century man has been using pesticides to attain satisfactory and economically sound production of many crops, particularly fruits and vegetables. New and more effective pesticides developed within the last decade now make possible further increase in production and at reduced production costs. For example, potato production per acre jumped about 50 per cent with the advent of DDT, and new fungicides that effectively control blight have materially increased and stabilized tomato production. Chemical control of weeds must be recognized as one of the significant agricultural developments of the past decade. One needs only to glance at growing crops, meadows and pastures to get a vague idea of what weed control can and will do for agricultural production.

Until recently chemical control of pests attacking cereal, forage and other crops of relatively low value per acre was considered entirely impractical and not economically sound, but the advent of new more effective pesticides has changed this concept. We now have pesticides that can be used effectively and efficiently on almost every crop and more are being developed and introduced each year. It is true we have encountered problems of insect resistance incompatibility of materials, suspected health hazards, etc., but these are transitory and can be overcome.

It has been variously estimated that in spite of presently employed pest control measures, insects, plant disease, weeds, rodents, and other pests exact an annual toll amounting to 25 to 50 per cent of all agricultural production and thus pest control is a field in which agriculture can logically expect to attain both expansion of production and efficiency in operation. There is little reason to expect that man will or can bring about the complete eradication of any individual pest and for that matter brief meditation on man's past record would indicate the inadvertant introduction and dissemination of new pests is much more probable.

There is no thought that pest control will become static. Insects, plant pathogens, etc., being living organisms, have great adaptive powers that enable them to make adjustments to meet changes in their environment whether they be physical, biological or chemical. The battle will be up hill all the way and will require continuous research but there seems to be no valid reason why the improved methods of pest control now available cannot add 10 or 15 percent to our agricultural production and there is every reason to expect further improvements.

The immediate problem is one of converting present knowledge to practical use. Farmers generally need guidance in determining where and when control measures are needed. To meet these needs the USDA in cooperation with state and other key plant pathologists and

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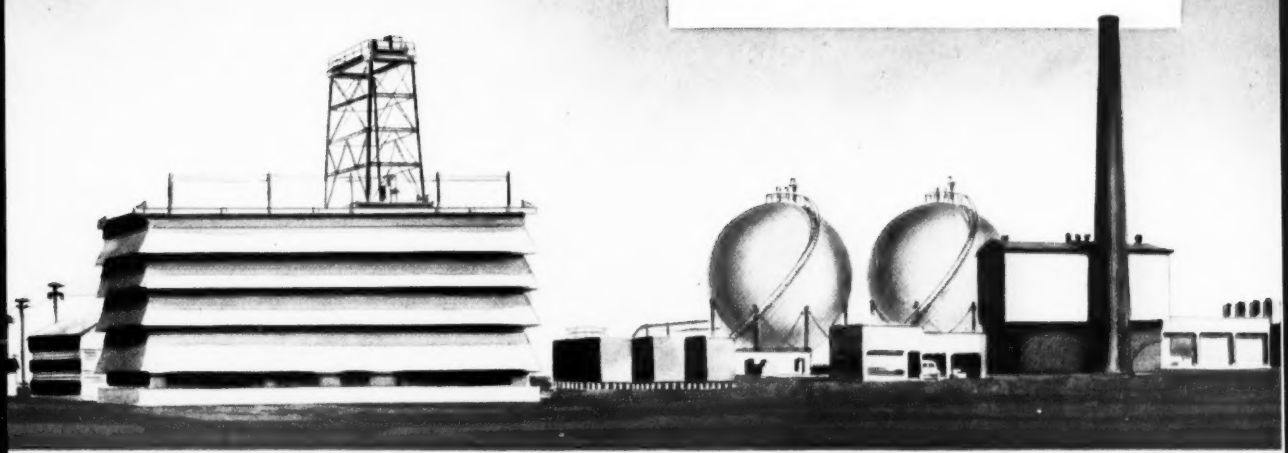

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entomolgists has developed two Service Surveys, The Plant Disease Warning Service (bi-weekly), and the Cooperative Economic Insect Report and Service Survey (weekly), which provide current information on the distribution, intensity and in many cases a forecast of impending infestations of many of our most important insects and plant diseases. Also many states prepare weekly press and radio service bulletins on the current status of important pests and timely pest control recommendations. These services, though relatively new, are bearing abundant fruit. The increased and more timely use of recommended preventive or control measures is already doing much to reduce crop losses and these services are still in their infancy. There is every reason to believe they will grow rapidly and increase in both efficiency and usefulness.

How are farmers responding to modern trends in pest control? It would appear that they are beginning to look to the pest control service reports as they do to the weather reports for guidance in their operations. As to the adoption of newly developed chemical control measures, the problem seems to be one of holding the farmers in line until the safety and soundness of experimental pest control procedures can be fully established by adequate research.

C. E. Palm

PESTICIDES ESSENTIAL TO OUR FUTURE

By Charles E. Palm, Head Department of Entomology
Cornell University, Ithaca, New York

Too many of us take for granted the food and fiber that are essential for our daily existence, yet the stark realism of too little to eat and to wear has been a grim reality in many areas of the world for centuries.

Competing with man on every turn for available supplies of food and fiber are the destructive insects, plant diseases, rodents, weeds—in fact, a host of living organisms we call pests. It is a continuous struggle that will never end, but its importance to human welfare assumes greater proportion as our population increases. The losses that pests are capable of producing are of utmost importance and must be kept to a minimum for the benefit of both the producer and the consumer.

Responsible leaders in our national economy have pointed out the necessity for increased production in future years from existing lands under cultivation if we are to feed and clothe the growing population. In fact, agricultural economists already have shown that our population increased forty-three per cent between 1920 and 1950. Yet the one hundred fifty-one million people in 1950 ate from essentially the same croplands as did the one hundred and six million people in 1920. It is certainly a strong commentary on the fundamental role that science is already playing in our food production program. Agricultural pesticides contributed their share to this maginificent performance.

The past decade has witnessed the rapid development of many effective new pesticides. In the insecticide field alone, the use of DDT, BHC, lindane, chlordane, aldrin, dieldrin, heptachlor, parathion, TEPP, methoxychlor, to mention but a few, indicates the strong trend toward synthetic organic insecticides. Similar developments have been made with new fungicides, herbicides, rodenticides and other pesticides. With the development of these chemicals has come progress in providing equipment for increased efficiency and speed of application.

How will the pesticide field contribute to the challenge of the "Fifth Plate?" It is anybody's guess at the moment what we will be using ten, twenty, or thirty years from now to control diseases and insects. One thing is certain—scientists in all parts of the world are engaged in basic, fundamental research on pesticides. New materials will be derived from this research whose names and value are today unknown; the key to our pest control in the future lies in research and its application to productions programs. We must support fundamental research as our source of security against future pest losses. America has been fortunate in recent years in getting a great deal of basic information on pesticide chemicals from Europe and England. In several instances we have been able to apply it more extensively than was possible in the country of its origin. Fortunately in the free world there are no barriers to the exchange of scientific information concerning methods of materials for pest control.

Much interest seems to be directed toward research with systemic pesticides—those chemicals that can be absorbed by the plant or animal in sufficient quantities to be deleterious to the pest but non-injurious to the host or to man or animals that might consume it. Some chemicals are showing amazing performance and doubtless future research will expand this field of pesticial usefulness.

The education of growers on the value of pesticides is a program that will pay increasing dividends in the future. National and state legislation to protect the producer and

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the consumer are essential developments that must receive continued attention in the pesticide field. Preventative measures including forecasts of pest abundance on a seasonal basis will enable growers to time their applications with more reliability.

Along with research on chemicals, their mode of action, methods of application etc., is an increasing awareness on the part of farmers of resistance developing on the part of particular pests to specific chemicals used for their control. The well known case of resistance to DDT which the housefly developed is an example. Another problem with the use of insecticides in some areas is the reduction of natural enemies of the pest species, or of minor pests, which enables them to develop into destructive populations. These problems in natural balance are of utmost importance and of necessity must receive constant consideration in the future.

In summary, we can say that the role of pesticides in our national economy is well established and relied on in every major agricultural production program. As science is called upon to bear an increasing load in feeding and clothing our growing population, the continuing programs of pesticide research, development and application will contribute vital roles in providing maximum returns from our agricultural production.

E. G. McKibben

FARM MACHINERY AND THE FIFTH PLATE

By EUGENE G. MCKIBBEN

Director of Agricultural Engineering Research, Bureau of Plant Industry, Soils, and Agricultural Engineering, U. S. Department of Agriculture

Americans are eating well today and have been ever since European colonies become well established on the Atlantic Coast some three hundred years ago. In fact, there is probably no other instance in recorded history of a people being so continuously well-fed for so long a period.

The primary reason for our well-stocked larder has been the availability of surplus farm land. So long as there were hundreds of thousands of acres of uncultivated, but potential farm land, there was no basic reason why there should not be enough to eat.

Thus, to date, we have been free to direct our best efforts to the problems of raising the general standard of living by increasing the output per farm worker. The results of this effort have been truly remarkable. A smaller and smaller part of our total labor force has been able to achieve an ever increasing agricultural production. When the Atlantic sea coast was first settled the work of all but a small percentage of the population was required to produce food and fiber, and, as late as 1850, two out of three of our national labor force were farm workers. Today the ratio is only one to six.

This truly remarkable increase in production per farm worker has released from the absolutely necessary occupation of farming the labor required for the less necessary but highly desirable production of a great variety of goods and services. These goods and services have resulted in a continuous rise in our general standard of living to the highest yet attained.

But what about tomorrow and the day after tomorrow? What about 1975 when we expect to have to feed five where we now feed four? Will we be able to maintain or perhaps continue to improve our nutritional standards and will we be able at the same time to continue to raise or at least maintain our general standard of living in spite of a rapidly increasing population?

If this goal is to be attained, more crop acres or higher yield or both will be required, and it will be necessary to farm these new acres and to increase yields without materially reducing the production per farm worker.

What contribution can be expected from farm mechanization and other engineering applications? The continued replacement of farm work animals by mechanical power may well release the equivalent of 15 million crop acres for human food production. This process has already released the equivalent of 100 million crop acres or about one-fifth of the total available. Except for this fact we might already be short of food rather than concerned as at present about surpluses of farm products.

In addition, engineering will have a large part in bringing more land into food crop production. More effective methods will be developed for using new and improved machines for land clearing, development, drainage and irrigation.

However, the acreage which can be released by replacing work animals and which can be reclaimed by all methods, is limited. Thus the growth of cities and increase in superhighways and airports will probably remove land from farm production about as fast as reclamation can add it.

Consequently, for the future we shall probably have to place greatest dependence upon increased yield

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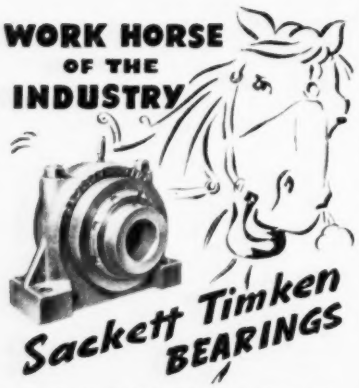

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per acre. Here again those interested in the engineering phases of agriculture expect to make a large contribution. We look forward to important improvement in machines for pasture establishment, and maintenance as well as the development of improvements in machines for tillage, fertilizer placement, planting, and cultivating which will make the best soil and water conservation practices feasible over the widest possible area.

Improved specialized machines for the most effective fertilizer placement will be of great importance in making the best use of the increased quantities of fertilizer needed for larger yields.. Better equipment for applying agricultural chemicals for insect pest, plant disease and weed control will greatly reduce the losses from these enemies and will materially increase the effective yield per acre. The same is true of equipment for applying soil fumigants, soil conditioners, and growth control chemicals.

There is also a good possibility that various forms of electro-magnetic energy may play an important role in controlling plant and animal growth responses, in the control of insects pests and plant diseases, and in food processing operations.

Again, in order to make certain that the maximum quantity of food produced on each acre reaches the dining table, we will have more efficient mechanical equipment and methods for harvesting.

For the same reasons, we must develop and place in operation, well before the passing of many years, better machines, equipment and handling methods for storing, transporting and processing food and feed products.

In the field of animal production there should be a considerable increase in the efficiency of feed utilization as a result of basic engineering and biological studies now under way on the effects of environmental conditions on growth and production of farm animals.

Lastly, if these engineering developments are to make their maximum contribution, there must continue to be constant and close cooperation between plant and animal scientists on the one hand, and food processing and merchandising groups on the other.

Also, we must maintain a sound social structure, because mechanized agriculture is absolutely dependent upon specialization and an effective exchange economy. It is also dependent upon efficient transportation, adequate and honest processing industries, effective and reliable merchandising operations, a sound money program, and last but not least, a stable and equitable government. These were major elements in helping to make possible the evolution which has taken place in agriculture in this nation within the last 100 years. They are elements which must prevail in the future as we prepare through technological means to produce the much greater output of foodstuffs we shall need in 1975 and beyond. Without this foundation of a sound social structure we can scarcely hope to reap the maximum benefits attainable from the almost limitless possibilities of physical and biological technology.

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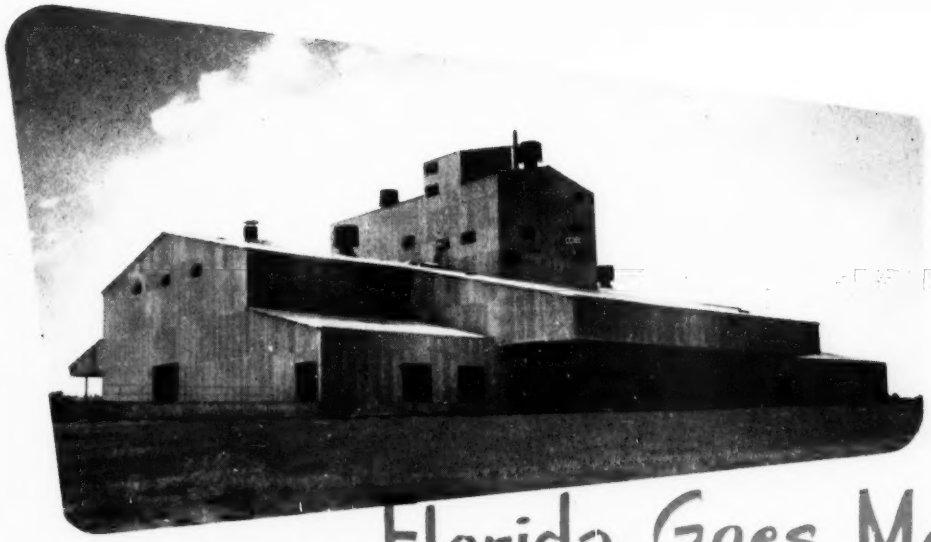

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The Plans for the Future

Working Together

By EZRA TAFT BENSON

Extracts from an address by the Secretary of Agriculture, before the American Institute of Cooperatives, Columbia, Missouri, August 12, 1953.

When I accepted appointment as Secretary of Agriculture, I said no salary in the world could have induced me to take the job. But the possibilities for service presented by working alongside the devoted men and women of the Department, counselling with such true friends of agriculture as I see here today, and cooperating with farmers and farm organizations throughout the land for the well-being of all our people—these were the most important factors in my decision to accept a place in the Cabinet.

I pledged to the President, and to the people, and I pledged to Almighty God in the sanctuary of my own conscience that I would strive without stint, and so far as it lay in my power—

to make and keep America economically strong and spiritually sound—

to nurture the spirit of self-help and independence among our farm people—

to use all the powers inherent in my position to promote stable prosperity and better living for rural America—

to induce the people to tell their Government, rather than to have Government tell the people, what kind of farm programs they need and want—

And finally, to carry out the policies of the Congress and the specific commitments of this Administration to our people, farm and nonfarm alike.

This Administration is committed to make improvements in our farm program. We have promised to reduce waste and mismanagement—to restore confidence in our Government—to curtail bureaucracy—to lower costs—and to help farmers work out successful farm programs with a minimum of government regulation and control.

We have promised to lay greater emphasis on marketing and research and on private initiative and enterprise.

In the administration of governmental programs, 7 months is a very short period. Yet, in that brief interval, we have made progress. Our progress is not as great as we desired; and it is not nearly as great as it is going to be in the period ahead. But **it is progress** — solidly based, carefully produced, and full of promise for the future.

We came into office at a critical time. The previous Administration had called for more and more production each year since Korea. For the past two years it had waived the imposition of acreage allotments and marketing quotas, when, according to law, they were in order for certain crops. As a result, we have to manage the fastest accumulation of excess reserves which has ever existed in the history of the farm programs.

We are not responsible for the existence of these excessive stocks. But we do have the job of managing them. This is a tremendous job, and a heavy responsibility.

May I assure you that we realize the magnitude of the problem confronting us. May I assure you further that we appreciate its seriousness. But may I assure you finally that we are going to meet it head on—that we are going to conquer it—and that the future of the American farmer will be better than the present or the past.

Agricultural Problems

By TRUE D. MORSE

Under Secretary of Agriculture

Extracts from an address, Joint Meeting, American Farm Economics Association and Western Farm Economics Association—Oregon State College, Corvallis, Oregon, August 19, 1953.

Agricultural problems have high visibility in Washington; it is not difficult to see them from the Office of the Secretary of Agriculture. It is not necessary to watch the markets closely to find when the price of cattle or wheat has fallen; there are those who are quite ready to call these matters to our attention. Few farmers or Congressmen, however, have reminded us of the high price of hogs, eggs and other products.

In this respect government is little different from the other fields in which agricultural economists operate. As a business consultant and farm manager, I found clients more inclined to write about a crop failure than about a bumper crop, and I am sure that those of you in teaching hear more frequently from the failing students than from those who receive the better grades.

Nevertheless, there are real agricultural problems and it is appropriate that we should be applying constantly our best efforts to their solution. It is in discovering sound solutions that economists have a tremendous opportunity to serve agriculture and the nation.

There are three tasks that must be accomplished before wise agricultural policy can be laid down.

The first is to agree upon the broad objectives which we recognize as desirable. In a Democracy, this is a task for all of us.

The second is to designate alternative means by which these objectives might be achieved and to indicate the probable consequences

of these alternative routes. This is a task for agricultural economists, along with other groups.

The third task is the choice among the alternatives, which is a major responsibility of the Congress.

It seems to me that as a nation we have made some decisions as to broad objectives. These decisions may not be wholly acceptable to any given person, but they command enough support so that they have served repeatedly as a discipline for our agricultural legislation.

The decisions to which I refer are such as these:

Agricultural resources should be used effectively. To destroy food, to hold productive agricultural resources idle and to cause prolonged delay in the adjustment to new technology—these are obstacles to the efficient use of resources which the public will not tolerate indefinitely.

Equality of economic opportunity is a basic right of agriculture and the pursuit of this objective is a responsibility of government. The small size of the typical farming unit and the limited bargaining power of farmers make it necessary that agriculture receive public assistance in research, education, and marketing.

Farmers should be protected from the more violent price fluctuations of the free market. It is generally agreed that the wilder gyrations of the free market do not serve a useful economic purpose and that farmers, being uniquely exposed to the effects of these fluctuations, should be afforded some protection against them.

If these are objectives of agricultural policy, then we are ready to ask the economist for his contribution: what are the means by which we may achieve these objectives?

Secretary Benson, in effect, has asked you this question. We have under way a full scale review of proposed agricultural legislation, involving the cooperation of over 60 different task forces and other groups throughout the country. Included are the agricultural colleges and a number of committees within the Department of Agriculture. Many of you in this audience have aided in preparing replies to the Secretary's questions.

The Secretary has written to thank each group for its cooperation, and I wish now to thank you publicly for your very helpful work. It is my responsibility to head this review, and therefore my good fortune to study the summaries coming from your reports. I have been impressed by two things —first the care with which these reports were prepared, and second, the high amount of agreement among them.

As viewed from my position of responsibility in the Federal Government, the following general areas of agreement emerge from your reports and therefore command attention:

1. Some agricultural programs are heading for serious trouble and are in need of adjustment and changes, according to the weight of opinion. Drought, war, major inflation and renewed war have rescued some of our farm programs during past years.

Depression measures have been continued during a period of extreme inflation and some wartime features have been carried too long. Now we need to make further changes to enable farmers to achieve stability, and prosperity **during the years of comparative** peace that presumably lie ahead.

2. **No single solution is appropriate** for all commodities, said our informants. We should not try to force any particular program on all of agriculture just because it has been found good for one commodity or for one period of time.

3. **Restricted production is not the answer** to "surpluses," with the exception of tobacco and possibly cotton (non-food crops)—according to most studies and reports.

The destruction of food, holding land and equipment idle or in limited use, and prolonged delays in putting improved production and marketing practices into use and other such obstacles to the efficient use of agricultural resources—these are not in the long-time best interest of agriculture or the nation.

4. The principle of flexibility is generally though not unanimously preferred over the present system of high rigid supports, by most farm **leaders and groups who reported to us.**

5. **The use of compensatory payments** is indicated by some as a device by which efficiency of the market could be retained while giving a measure of security to the individual, as a means of giving equitable and practicable price support to both perishable and storable commodities. On the other hand, misgivings are evident on the part of many farmers and some professional people with respect to the use of this device.

6. **Two-price plans and multiple price systems deserve consideration,** according to a growing number of opinions. These are discussed primarily in connection with major crops, particularly wheat.

Such plans propose strong support prices for that quantity of the product sold in the primary and domestic markets, and permit sale of additional quantities for secondary uses, or on the world market at competitive prices.

Difficulties which would have to be overcome are the technical problems of separating the high-priced from the low-priced market and maintaining of proper international relationships.

7. **Use of modernized parity** is being urged, with a transitional parity to help make the change. The advocates point out that is the way to permit price supports to reflect current and changing conditions of demand for products, supplies, and costs.

All who expressed themselves on this point concurred in the above opinion.

8. **More exports of "surplus" farm products** must be developed. This is recognized as a major objective —and will not only help stabilize our markets but will get food to

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The use of flexible rather than rigid price supports, which would result in prices nearer the world level.

A two-price system, which would separate the domestic from the foreign market.

Selective export payments out of tariff revenues, authority for which is now provided by law.

It was stated that changes in price support policies cannot alone offset difficulties now encountered in international trade. Increased offshore procurement, increased private foreign investment, and relaxation of restrictive foreign controls against U. S. farm products were recommended.

9. **Droughts, floods and tornadoes** in quick succession have again this year pointed up the need for more adequate protection and reserves against disaster.

Federal Crop Insurance was approved by some and questioned by others, though all agreed that the objective of spreading risks is desirable.

10. **Federal marketing agreements** and orders should be more extensively used, according to many suggestions received.

Marketing agreement experience on the West Coast covers over 20 years and appear to be generally successful. For example, there are eleven such Federal agreements operating in California alone. Six cover fresh fruits, two dried fruits, two tree nuts, and one potatoes.

11. **Under-employed farm families** should have special consideration, as present price support and other commodity programs do not well fit their particular needs, said our informants. There are about 1.1 million full-time farm operators in the United States who in 1949 had total family incomes from all sources of less than $2,000.

Our New Challenge

Summary of remarks by R. E. Short, Assistant Secretary of Agriculture, at University of Delaware Agricultural Substation Field Day, Georgetown, Delaware, August 5, 1953.

One of the great things about our nation is the way that agricultural people, here and in similar areas all across the country, recognize their problems candidly and tackle them scientifically. This combination of common sense and science pays off, as is amply demonstrated at this field station by your many contributions to the poultry, horticultural and truck crop industries.

It is this sort of approach that has brought about the great strides in our agriculture in recent years. Since prewar, yields of all crops in the United States are up a third. Potato yields are up 95 per cent. Milk production per cow is up 18 per cent. Hens each year lay an average of 37 more eggs.

But even greater challenges lie ahead. They tell us that by 1975 our present 159 million population may have grown to 200 million. New cropland will not increase in proportion. Science and good farming will have to meet the challenge. This will mean more and better research, and the extending of this research in even better fashion to farmers.

A few years ago we had a large backlog of unused agricultural research. It takes a few years before laboratory or field station findings are in general application on farms. Wartime pressures greatly accelerated the application of research and we have been using up our backlog at a great rate ever since. Now, in some cases, we are nearing the bottom of the barrel. We encounter farm production problems for which there is no ready answer. Farming is a constant struggle to cooperate with nature—to resist those pests and diseases that are harmful and to utilize those forces that are helpful. We need to have more and more facts in these years ahead, and your station's role will be an important one.

Where Farm Policy Is Born

Extracts from paper prepared by Assistant Secretary of Agriculture J. Earl Coke for the Missouri Balanced Farming Action Day Program, Chariton County, Missouri, July 28, 1953.

It is one of my beliefs that occasions such as this are the real birthplace of our national farm policies.

Perhaps you are surprised to hear me say this. Some of you may have thought that, as an official of the Department of Agriculture, I believed farm policies should be born in Washington—on Capitol Hill, at the White House, and in the Department. No, the President, and the Congress, and the Secretaries of Agriculture put the farm policies into legislation and into executive programs—but it must be the people who ultimately **create** farm policy. That's the way we want it in our free republic.

You people have come together to exchange ideas about farming. You are here because you are interested in improving farming efficiency and farm living. You are striving to bring farm needs, and farm problems, into sharper focus so that we will all be able to see more clearly what can and must be done. You are here because you know that your Balanced Farming Program is a means of bringing about a stronger and economically secure agriculture for the benefit of not only the individual farm family but of all the people of this nation.

We have tackled our problems in agriculture in piecemeal fashion, one by one, giving our attention to this difficulty or that, whichever seemed to be causing the most trouble. It has been a case of the squeaky wheel getting the grease.

Now don't misunderstand me. This piecemeal approach has been remarkably effective. Our agriculture has made great strides in the past 40 years. Nobody can deny that, and certainly I am as proud of our progress as any man.

Nevertheless, the time when we could depend entirely on the piecemeal approach to do the needed job is no more.

The time has come for us to examine the state of our agriculture as a whole—and to develop a comprehensive, closely coordinated approach to its problems. I said coordination—not controlled. You are showing the way in Missouri.

We must not only produce new facts rapidly, but we must also put them to use rapidly. Our situation emphasizes the need for concerted efforts, using the best methods of individual contact, group contact, and mass media to bring to the farmer these new things.

To little and too late won't do.

The wise use of our agricultural resources is essential to a strong national economy. We need, therefore, a constructive and expanded program of resources conservation —flood control, sound land use, reforestation, and water management, with greater emphasis on agricultural research and education and on local control.

The conservation of our agricultural resources is as broad as agriculture itself. It involves much more than the preservation of soil fertility or control of erosion. It involves also the wise use—the better use—of machines—the better breeding of animals—the better application of improved farming practices such as the use of new plant varieties and new chemicals. It involves the wise use—again, the better use—of time and energy. And above all, it involves the preservation and improvement of human resources and human values in agriculture.

If you accept this definition of conservation, it is obvious that the Land-Grant Colleges, the Experiment Stations, and the Department of Agriculture have for years been effectively active in this field and this has shown that we need a comprehensive, closely-coordinated approach.

In addition to the conservation and flood prevention functions of the Soil Conservation Service, Forest Service, and Agricultural Conservation Program, most of the other agencies within the Department of Agriculture also make direct contribution to these same functions through their regular programs. A considerable amount of the research for the Agricultural Research Administration and certain economic studies of the Bureau of Agricultural Economics help provide the factual basis for conservation improvements of agricultural resources. The place of farm credit is important in extending the application of soil and water conservation. The Farm Credit Administration and the Farmers Home Administration thus make important contributions. The Extension Service provides conservation assistance to **all** farmers. And here again let me define conservation in its modern concept—that of improving our natural and human resources.

I hope this coordination of effort and teamwork will continue and constantly improve in order to give better service to farm people in whose hands the major task of conservation lies.

But again let me emphasize that the end purpose of conservation is not the welfare of the land, but the welfare of the people.

BANKS SHOULD TAKE LEAD IN PROGRESSIVE FARMING, SAYS ROUSE

Arkansas bankers should take the lead in their communities in urging and encouraging farmers to adopt the latest scientific methods of farming, Willard G. Rouse, assistant treasurer of Mathieson Chemical Corporation, told members of the Tenth Arkansas Bankers Seminar, sponsored jointly by the Arkansas State Bankers Association and the School of Business Administration of the University of Arkansas.

Citing nitrogen fertilizer as an example, Mr. Rouse said that if local farmers used these fertilizers in the amounts recommended by county agents the value of agricultural production in the State would be increased by as much as $160 million annually.

For individual farmers, Mr. Rouse said, this greater use of fertilizer would mean—at prevailing fertilizer and crop prices—an average additional net return of $11.36 per acre for oats, $40.50 for rice, $27.38 for hay, $12.60 for cotton, and $33.58 for corn.

"Arkansas will become a more prosperous and happier state in which to live if the agricultural industry properly progresses," he said. "What better or more important service can you as bankers render your community than helping to further develop an industry as important as agriculture?

"Cash receipts from farm marketings during 1952 totalled $619,843,000 in Arkansas, according to the U. S. Department of Agriculture," Mr. Rouse said. This, he pointed out, is greater than combined salaries and wages of all employees in manufacturing establishments and total wages paid employees and proprietors of retail stores in Arkansas.

Mr. Rouse suggested to the bankers that if their loans to the farming industry do not compare favorably with their loans to other forms of business, they should make a greater effort both to meet the requirements of farmers and to assist and encourage them in the adoption of modern farming practices. As ways in which they can do this, Mr. Rouse urged the bankers to:

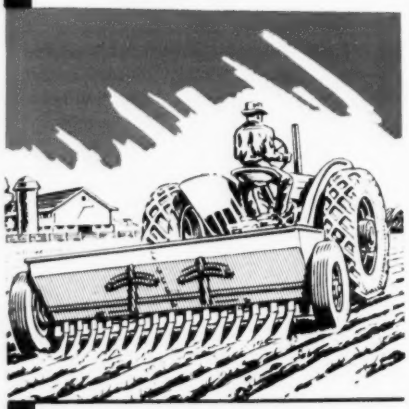
1. Publicize their interest in assisting the farmer in his requirements for working capital;

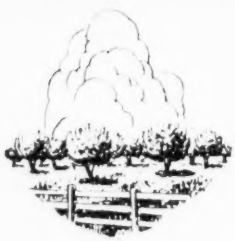
2. Employ a qualified agricultural representative who can serve the farmer as a specialist in his problems;

3. Cooperate with the county extension directors in providing information and distributing literature, establishing fertilizer demonstration plots, and holding meetings.

TENNESSEE CORPORATION

MINERAL SALTS





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ZINC SULPHATE

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MANGANESE SULPHATE

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MAGNESIUM SULPHATE

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BORON

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FERRIC IRON SULPHATE

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Minerals are just as essential to healthy plant growth and optimum production of vitamin-rich crops as are nitrogen, potash and phosphate. Mineralized fertilizer stimulates sales and creates new business because the results are conclusive. Fertilizers that give superior results are the fertilizers that the growers buy.

As basic producers of minerals, we would like to discuss mineralized fertilizer with you and show you how to increase your fertilizer tonnage and profits by the addition of minerals.

We can supply mineral mixtures to your own specifications in large or small quantities.

SOLUBLE TRACE MINERALS

Tennessee's trace minerals are soluble and their nutritional value is immediately available to the plant. Soluble trace minerals are more economical and faster acting.

For detailed information, phone, wire or write—

TENNESSEE CORPORATION

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The St. Gobain process manufactures complete Nitrophosphate granulated fertilizers in one continuous automatic operation. Its extreme flexibility permits the production of various nitrogen-phosphorous-potash formulae without altering the equipment.

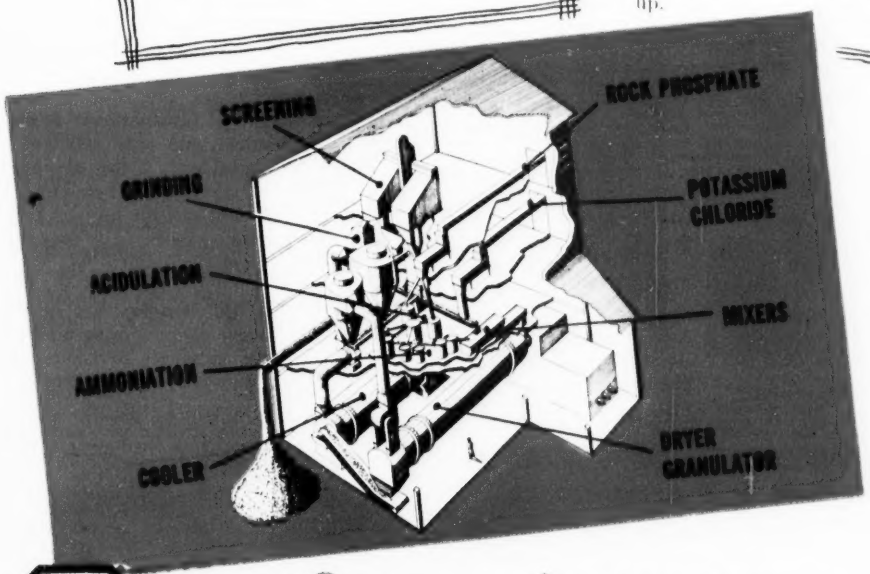
b enefits

You benefit from the improvements made during the ten years of successful industrial operation. The St. Gobain system reduces the sulphuric acid consumption by replacing it with nitric acid. No phosphate rock grinding is necessary.

C apital

Investment and operating costs are low due to simple equipment, continuous operation, and to a very high yield.

St. Gobain plants are built for 30,000 tons of fertilizers yearly capacity and up.



For further information write to the agents for St. Gobain Processes

General INDUSTRIAL DEVELOPMENT CORPORATION

270 PARK AVENUE, NEW YORK 17, N. Y.

EXAMPLES OF FORMULAE PRODUCED BY ST. GOBAIN PROCESS

N%	P O %	K O%	
10	10	17	(sulfo-nitric acidulation)
11	11	11	" " "
10	15	20	(phospho-nitric acidulation)
12	15	18	" " "
12	12	20	" " "
14	14	14	" " "
10	20	20	" " "

The July issue of Commercial Fertilizer carried a part of the picture shown here, but the reason for making this picture was almost invisible when it appeared. Because it was such an unusual tribute to an industry member, we are rerunning it in full to show the really beautiful sterling tray carrying the facsimile autographs of the thirty-four Directors of NFA, with which come twelve sterling mint julep cups that were presented to Jim Totman, Summers Fertilizer Company, Baltimore, by NFA Board Chairman, Louis A. Ware, president, International Minerals & Chemical Corporation. The presentation was made during NFA's June meeting at the Greenbriar to retiring Chairman Totman, for exceptional service to NFA. Here, NFA President Russell Coleman joins the recipient in admiring the beautiful gift.

Ralph B. Douglass (fourth from right), president of the Smith-Douglass Company, Inc., Norfolk, Virginia congratulating the first employees of the company to participate in the employees' retirement plan, which was established 10 years ago and allowed to increase in the interim. Left to right are Pat G. Poyner, 69; Eddie Harrell, 68; B. Frank Brown, 65; N. L. Capps, 60; Douglass; B. W. Lockhart, 65; Edward H. Spencer, 70, and Willie C. Nixon, 65. Employees retiring this year at locations other than Norfolk are as follows: F. C. Wozniak, Lynn, Massachusetts; A. V. Kansky, J. H. Koch, P. O. Massey, Joseph Sladky, Sr., and Esau Funches, all of Granite City, Illinois. There were sixteen employees altogether that retired this year.

Personals

Joseph A. Howell, Virginia-Carolina president is one of those who believe American business will speed right on without even shifting gears because of the Korean truce. Says Mr. Howell: "The truce will have no effect whatsoever. It's just a cessation of hostilities, and nobody knows what will happen after that."

* * *

W. W. Doughty has been moved up from treasurer to president of Augusta Fertilizer Co., Augusta, Georgia. Vice-president **C. A. DeBeaugrine** has also become treasurer. **M. M. Smith** remains as secretary.

* * *

Carl C. Chaffee, former chief of the Bureau of Mines coal hydrogeneration demonstration plant has joined the staff of **Consumers Cooperative,** Kansas City, to be assistant superintendent of their $15,000,000 nitrogen fertilizer plant, being built near Lawrence, Kansas, as readers of Around the Map well know.

* * *

Alva "Skinny" Shelton has taken over his new duties as manager of the Muscogee (Oklahoma) Consumers Co-operative fertilizer plant, replacing **Ralph Page,** who resigned to go to Fostoria, Ohio, to manage a fertilizer plant there.

* * *

A. C. "Red" Jones Jr., owner and manager of the **Batesburg Fertilizer Company,** has announced as candidate for Mayor of Batesburg, S. C.

* * *

Robert A. Bell has been named assistant treasurer of the **Richmond Guano Company,** Richmond Virginia.

* * *

Barnwell Fuller, for many years manager of the Florida phosphate mines for **International Minerals & Chemical,** and now assistant to the vice president of the phosphate division, was brought home in a special plane sent out for him by the Company when he recently was taken ill in Texas.

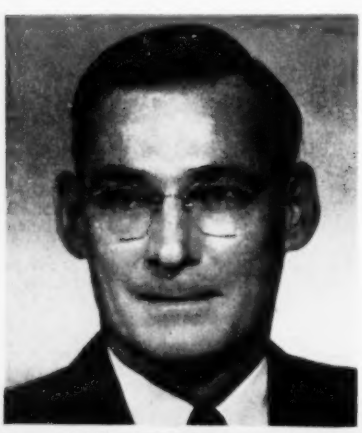
* * *

B. Otto Wheeley has been made Southern district sales manager for the tar products divisions of **Koppers Company,** succeeding the late

W. C. "Chan" Smith, who has joined Thurston Chemical as a staff member. He had been with Armour for 18 years.

H. G. "Gay" Barclay, who has joined the Thurston Chemical staff. He has been with Grace interests since 1934.

Walter B. Gillette, eastern representative of the bag division of Virginia-Carolina, with New York headquarters; with V-C more than 5 years.



F. G. Owen. He joined Koppers in 1943.

* * *

Elliott M. Harold has been appointed branch plant manager of the New Orleans mixed fertilizer plant of **Davison Chemical** to succeed **Henry Gaudet,** who is retiring as manager but continuing as a consultant, it was announced by **W. N. Watmough, Jr.,** vice president. The plant and offices are located in Gretna, La. Mr. Harold came to Davison in 1929.

* * *

Kelley Berger found a cake from the Red Cross and a jeweled pin from the **Nitrogen Division** when he walked in to make his 100th blood donation at the mobile station at the South Point nitrogen plant.

* * *

A. V. Phillips and **H. H. Allen,** directors of **Bemis Bro. Bag Company,** have announced their retirement and resignation from the board. Their combined service with the company totals 126 years, of which they have served on the board of directors 42 and 41 years respectively.

F. G. Bemis, president, has announced the election of **T. W. Little** and **R. M. Hersey** to membership on the board of directors, to fill the unexpired terms of Messrs. Phillips and Allen.

* * *

A. J. Dirksen is Eastern representative of the sales development department of **American Potash & Chemical Corporation,** it was announced by **Alfred M. Esberg,** vice president. Dirksen for the past nine years has been associated with the market development division of **Phillips Petroleum Company.**

* * *

Frank W. Myers, Jr., has been appointed assistant manager of the Great Lakes sales district of the multiwall bag division, **St. Regis Paper Company.** He will assist **Charles A. Woodcock,** vice president and district manager of **St. Regis Sales Corporation**

Floyd Bowen, right, being presented with a gold wrist watch by C. Lester Richards, who succeeds him as manager of International Minerals & Chemical's rock and chemical departments, on the occasion of a picnic in his honor.

Wayne M. Waller has been appointed manager of the Baltimore branch of H. J. Baker & Bro., according to an announcement by H. V. B. Smith, partner in the Baker organization.
Waller, owner and manager of an Iowa farm, is widely known for his encouragement of better land usage and lower crop production costs.

J. R. Peat, promoted to sales manager of the St. Louis branch of Chase Bag Company. He joined Chase in 1948.

Dr. John R. Brown, Jr., has been named general manager of Research and Development of Spencer Chemical Company in Kansas City, Mo. He succeeds R. F. Brown, who is now Spencer general works manager. Dr. Brown had been vice-president and director of research of the Lambert Pharmacal Company in St. Louis.

W. F. Mulvaney, who has been appointed supervisor of multiwall paper bag sales for the entire Bemis Bro. Bag Company, succeeding C. W. Akin, not shown, who has been made assistant director of sales. Right, K. W. Koechig, now supervisor of small paper bag sales for Bemis. He previously was assistant to Mr. Akin.

John Miller, new Southeastern district manager for Highway Equipment Company, Cedar Rapids, with Atlanta headquarters.

Other changes have been announced for the St. Regis Great Lakes sales district of the multiwall bag division as follows: **William T. Orr** has been appointed supervisor of multiwall bag sales in the St. Louis and Kansas City territories.

Sales in the Kansas City area will be handled by **Robert P. Worden** and **Thomas A. Patterson** under the supervision of Mr. Orr in St. Louis.

Multiwall Bag Sales representatives, under Mr. Orr in the St. Louis area, are **W. Malcolm Lowry** and **Clifford E. Freeman.**

Jack A. Larigan has been advanced to supervisor of multiwall bag sales in the Minnesota, Iowa, North Dakoata, eastern South Dakota and northern Wisconsin territories, maintaining his headquarters in Minneapolis, Minn. Mr. Larigan has been with St. Regis for the past seven years.

B. F. Alm, who resides in Des Moines, will be representative for Iowa and eastern South Dakota. **William H. Foran** will be sales representative for Minnesota, North Dakota, and northern Wisconsin. Both Mr. Alm and Mr. Foran will report to Mr. Larigan at his headquarters in Minneapolis.

* * *

Gilbert Balkam has been appointed Secretary-Treasurer, **Chilean Nitrate Sales Corporation,** it was announced by **James F. Doetsch,** President. Mr. Balkam succeeds the late **James E. Hurley.** Prior to his appointment, he was Assistant Secretary and Assistant Treasurer of the Corporation.

* * *

Harold E. Hamby is District Manager of **Chilean Nitrate's** Shreveport, Louisiana office, succeeding the late **Frank R. Curtis.**

Mr. Hamby, for a number of years, has been a member of the Chilean Nitrate sales organization in the State of Georgia.

* * *

E. A. Kendler has retired as Western sales manager of **Gilman Paper Company** and their subsidiary companies, after forty years of service. **Fletcher L. Munger,** formerly with **St. Regis** and **Bemis Bag,** has been

Jack Rutland

appointed to the post.

* * *

Robert L. Zale has become Products Promotion manager; **C. Gustavus has** become division manager of the Southwest for **National Gypsum.** Both posts are newly created.

* * *

John W. (Jack) Rutland, General Manager of the Plant Food Division of **International Minerals & Chemical Corporation** in Chicago, Ill., has resigned from that Corporation effective September 1st, after service extending over 27 years. He was with the **International Agricultural Corporation** in Atlanta from 1921-29, and later associated with it again in 1935, as Manager of the Materials Department. When that concern was merged with the present Corp., IM&CC, Mr. Rutland transferred to the Potash Division in 1941, in charge of southern sales, and became General Sales Manager of the Division in Chicago August 1st, 1943. He was transferred to the Plant Food Division on January 1st, 1950, as General Sales Manager, and later appointed to General Manager of the Division, which position he held at the time of his resignation.

At a farewell dinner in Mr. Rutland's honor at the University Club of Chicago, special tribute was paid to his long service and many contributions to the success of International's operations.

It is understood that Mr. Rutland will devote more personal attention to his interest in **Smoky Mountains Fertilizer Company,** Waynesville, N. C., of which he is Vice-president, **Southern States Phosphate and Fertilizer Co.,** Savannah, Ga. and that he has also organized a new concern, **Western Carolina Phosphate Company,** Waynesville, N. C., to operate in connection with the fertilizer company, and will serve as President of the new company.

* * *

Fred W. Hatch, manager of the **Julius Hyman & Company** Division of **Shell Chemical Corporation,** has announced two high level changes in his sales staff. **Lawrence F. Stayner,** formerly sales manager of the division, has been made assistant to the manager and in that position will work directly with Hatch on general division problems. **James J. Lawler** will become sales manager after a brief special assignment in Shell Chemical's headquarters in New York. The Hyman Division headquarters are in Denver, Colorado.

* * *

Henry Valve Company, Melrose Park, Illinois, announce the appointment of **Norman J. Le Blanc** as representative for their line of Ammonia Valves used in soil fertilization. Mr. Le Blanc's territory includes Alabama, Arizona, Arkansas, Georgia, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas. He maintains his office at 103 Ridgewood Drive, Norco, Louisiana.

* * *

George F. Wilkins has been elected a vice-president of **Jefferson Lake Sulphur,** with offices at Wendell, Idaho.

* * *

Charles S. Phillips, for 3½ years mine superintendent for **V-C Chemical** at Fort Meade, Florida, has joined **Kaiser Bauxite** and will be located in Jamaica.

Herb Was Not The First

In July, in discussing the Georgia Plant Food Educational Society luncheon to the Grassland Contest winners, we mentioned the presence of Herb Davis, and called him the "first president and one of the founders of the South Carolina Plant Food Educational Society." Herb was not the first president. A. D. Kincaid, Southern Cotton Oil, Columbia, holds that honor . . . which includes the honor of being the first president of the first of the rapidly growing group of such societies.

One-Stop NITROGEN Service For Fertilizer Manufacturers

LION

Nitrogen

FERTILIZER MATERIALS

LION ANHYDROUS AMMONIA—For formulation. A uniformly high-quality basic product. Nitrogen content, 82.25%.

LION AQUA AMMONIA—For formulation or acid oxidation. Ammonia content about 30%. Other grades to suit you.

LION AMMONIUM NITRATE FERTILIZER—For direct application or formulation. Improved spherical pellets. Guaranteed 33.5% nitrogen.

LION NITROGEN FERTILIZER SOLUTIONS—For formulation. Three types to suit varying weather and manufacturing conditions.

LION SULPHATE OF AMMONIA—For direct application or formulation. Large free-flowing crystals. Guaranteed nitrogen content, 21%.

TECHNICAL SERVICE—Lion provides special technical assistance for fertilizer manufacturers. Write to CHEMICAL SALES DIVISION for quick service.

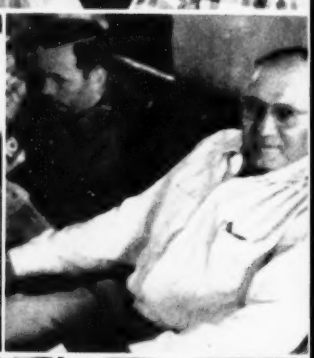
LION OIL COMPANY

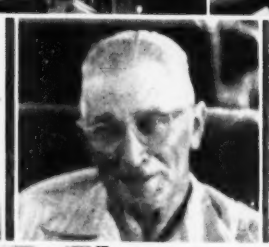
EL DORADO, ARKANSAS

SOUTHWEST FERTILIZER CONFERENCE

Pictures by Joe Weisberg, Universal Detergents, Worth.

1. John R. Taylor, American Plant Food Council, Inc., Washington. 2. Speaker, B. L. Henderson, Campbell Fertilizer Works, Houston, Texas. 3. Dr. and Mrs. J. F. Fudge, State Chemist, College Station, Texas. 4. Mr. and Mrs. W. S. Tyler, Longhorn Eng. Co., Sulphur Springs, Texas. J. T. Carlisle, Jacksonville Fertilizer Co., Jacksonville, Texas. Walter Young, Hi Yield Plant Food Co., Mt. Pleasant, Texas. 5. Mr. and Mrs. D. H. McKinney, Red Star Fertilizer Co., Sulphur Springs, Texas. J. T. Carlisle, Jacksonville Fertilizer Co., Mr. and Mrs. Ira E. Moss, Shreveport Fertilizer Works, Shreveport Fertilizer Works, Shreveport, La. 6. W. R. Higgs, Shreveport Fertilizer Works, and R. T. Gilliland, International Minerals & Chemical Corp., Ft. Worth, Texas. 7. R. I. Gilliland, Ft. Worth, and C. D. Shallenberger, Shreveport Fertilizer Works. 8. Harold Trammel, Farmers Fertilizer Co., Texarkana, Texas. P. A. Yeats, State Board of Agriculture, Oklahoma City. A. W. Kinnard, Nitrogen Division, Jackson, Miss. 9. W. R. Higgs, Shreveport, R. I. Gilliland, Ft. Worth. 10. Mr. and Mrs. H. Dean Smith and son, Hi Yield Fertilizer Co., Bonhan, Tex. 11. R. J. Kenyon, Phillips Chemical Co., Houston, H. Dean Smith & Son, Walter Young, Hi Yield Plant Food Co., Mt. Pleasant, Texas. 12. G. I. Gilmore and daughter, El Dorado Fertilizer Co., El Dorado, Ark. 13. R. W. Lassiter, Lion Oil Co., El Dorado, H. W. Lust, Tyler Fertilizer Co., Tyler. 14. Mr. and Mrs. D. H. McKinney, Red Star Fertilizer Co., Sulphur Springs, Tex. 15. Charles Waldman, Fulton Bag & Cotton Mills, Houston, Texas. 16. Charles McDaniel, Lion Oil Co., El Dorado. 17. P. J. Palmer, Shreveport Fertilizer Works. 18. R. W. Ludwick, Feed & Fertilizer Control, State College, New Mexico. 19. W. R. Higgs, Shreveport Fertilizer Works. 20. Mr. and Mrs. J. B. Snell, Minden Cotton Oil & Ice Co., Minden, La. 21. E. L. Freeman, Southern Cotton Oil Co., Little Rock, Ark., Floyd Prather, Central Texas Fertilizer Co., Comanche, Tex., Lee Gray, East Texas Products Co., Tyler, Tex. 22. James O'Neal, Lion Oil Co., Shreveport. 23. James O'Neal. 24. Roger D. Hamilton Southwest Fertilizer and Chemical Co., Las Cruces, N. M.





Pacific N. W. Adopts Demonstration Projects

A special meeting of the Board, Pacific Northwest Plant Food Association, was held at Pullman, Washington, following a lengthy meeting with the Soil Improvement Committee. A committee from the Association had previously met with the Soil Improvement Committee to work out a sound policy on Farm Demonstration projects. The following was recommended and adopted by the board:

"1. In view of the limited funds available for project demonstration purposes and yet recognizing the need for carrying on the farm fertility program in the states of Oregon and Idaho on a basis similar to the Benedict, Whatcom County Washington project; and by reason of the particular success of the above referred to Benedict project, it is proposed that the Association, through the Soil Improvement Committee, furnish technical service only for the third year of the demonstration.

"2. Assuming that the estimated cost of any given state project may approximate three thousand dollars over a three year period it is proposed that the maximum contribution—by the Pacific Northwest Plant Food Association shall not be more than one thousand dollars; that organizations and agencies within the local community provide a maximum of one thousand dollars for the purposes of defraying the second year's fertilizer expenditures; and further that the farmer be agreeable to invest a maximum of one thousand dollars for defraying third year fertilizer expenditures on the understanding that the investment by the farmer insofar as necessary may be based upon a credit arrangement predicated upon being underwritten by the Association.

"3. It is further proposed that purchasing arrangements for the fertilizer required for the three year program be predicated upon the prevailing retail price in the local areas, less a 10 per cent discount.

"4. It is proposed that the necessary funds required by the Association for the purposes of carrying on its activities be derived from fund raising means other than direct assessment on the membership."

New England ASA Meeting

250 attended the farm day meeting of the New England branch, American Society of Agronomy, when it met at the University of Maine. New projects of the AES were inspected, and the next three days were spent at the Aroostook County station. Following this the group spent two days at the Fredericton, New Brunswick station in Canada.

Virginia Pasture Tour Cancelled

The proposed Shenandoah Valley-Northern Piedmont Pasture Tour, scheduled for September 9, 10 and 11, 1953, has been called off by the Virginia Polytechnic Institute due to the serious drouth in that area.

For ammonium sulphate
you can count on Koppers!

Koppers offers a good commercial grade of ammonium sulphate—the ingredient that is so essential to fertilizer because of its high nitrogen content.

CHARACTERISTICS— Koppers Ammonium Sulphate comes in crystals with low free-acid and moisture content. The nitrogen content is guaranteed to be not less than 20.5%.

SHIPMENT— From St. Paul, Minn. and Kearny, N. J., Koppers Ammonium Sulphate is shipped in 100 lb. and 200 lb. bags—also in boxcars and trucks. From Granite City, Ill. and Midland, Pa., it is shipped only in boxcars and trucks.

KOPPERS **COAL CHEMICALS**

KOPPERS COMPANY, INC.
Tar Products Division, Pittsburgh 19, Pa.

1952 Agricultural Liming Materials Consumption

Reproduced is the 24th consecutive annual survey of "Approximate Consumption of Liming Materials on United States Farm During 1952" by the National Lime Association.

For the third straight year there was virtually no change in liming consumption. For 1952 the total tonnage of all liming materials was estimated at 26,415,100 tons.

Sectionally, minute decreases were experienced in the Northeast and East Central areas, with the greatest decline in the South, 12%. The North Central section enjoyed a slight increase, while the West gained the most (8%). One noteworthy change is that Iowa replaced Illinois as the greatest lime consuming state. Previously Illinois had led for the past 17 consecutive years.

The greatest percentage gain occurred in Nebraska, a new lime consuming state, of 116%. Ohio laid claim to the greatest tonnage increase of about 500,000 tons. Florida reversed the downward trend in the South by increasing their tonnage by 34%. Other increases occurred in Iowa, Michigan, Minnesota, Missouri, Maryland, Connecticut, and Delaware.

On the minus side, Oklahoma had the biggest percentage decline, of 31%, and Illinois the largest tonnage decrease of 700,000 tons. Substantial losses occurred in Alabama, Georgia, North Carolina, Mississippi, and lesser losses in most New England states.

24th Consecutive Annual Survey
APPROXIMATE CONSUMPTION OF LIMING MATERIALS ON UNITED STATES FARMS DURING 1952
by National Lime Association, Washington 5, D. C.

State (1)	Agricultural Limestone (2) (Tons)	Burned Lime (Tons)	Hydrated Lime (Tons)	Marl (Tons)	Miscellaneous Materials (3) (Tons)	Total Liming Materials (Tons)	Lime Oxides (4) (Tons)	Lbs. of Lime Oxides per Ac Cropland (5)	Cropland & Pa
Maine	51,500	--	3,500	--	--	55,000	28,200	47.6	40.1
New Hampshire	30,200	--	200	--	--	30,400	15,240	87.3	67.7
Vermont	68,600	500	500	100	--	69,700	35,130	75.0	60.8
Massachusetts	52,000	--	3,000	--	--	55,000	28,100	118.8	90.1
Rhode Island	9,300	--	700	--	--	10,000	5,140	186.9	126.9
Connecticut	59,000	--	1,000	--	--	60,000	30,200	163.7	121.3
New York	813,000	--	17,000	20,000	--	850,000	426,400	123.5	100.5
New Jersey	134,500	2,000	24,000	--	1,500	162,000	86,410	185.8	158.4
Pennsylvania	1,105,000	31,000	61,000	8,000	7,000	1,212,000	628,480	183.9	158.2
NORTHEAST	2,323,100	33,500	110,900	28,100	8,500	2,504,100	1,283,300	142.3	118.1
Delaware	65,000	7,500	3,500	--	1,000	77,000	41,950	181.2	156.8
Maryland	208,000	51,000	22,000	30,000	10,000	321,000	180,280	196.2	157.7
West Virginia	174,000	8,000	4,000	23,000	11,000	220,000	110,440	141.0	93.8
Virginia	741,500	16,000	7,000	73,500	15,000	853,000	425,130	201.2	146.9
North Carolina	435,000	--	--	5,000	--	440,000	219,500	63.0	57.0
Kentucky	985,000	--	--	18,000	6,000	1,009,000	501,200	158.2	86.4
Tennessee	595,000	5,000	5,000	--	25,000	630,000	315,400	89.3	63.6
EAST CENTRAL	3,203,500	87,500	41,500	149,500	68,000	3,550,000	1,793,900	126.1	89.3
Ohio	2,555,000	2,000	28,000	4,000	57,000	2,646,000	1,323,060	233.6	197.8
Indiana	2,346,000	6,000	1,000	123,000	1,000	2,477,000	1,222,430	207.6	176.8
Michigan	430,000	--	--	220,000	25,000	675,000	302,000	148.7	99.9
Illinois	3,100,000	--	--	--	--	3,100,000	1,550,000	145.2	129.5
Wisconsin	1,787,000	--	6,000	12,000	20,000	1,825,000	909,900	169.8	141.0
Minnesota	436,000	--	--	4,000	--	440,000	219,400	21.0	19.5
Iowa	3,250,000	--	--	--	--	3,250,000	1,625,000	141.9	124.8
Missouri	2,635,000	--	--	--	195,000	2,830,000	1,395,500	378.8	311.1
NORTH CENTRAL	16,539,000	8,000	35,000	363,000	298,000	17,243,000	8,547,290	154.8	134.0
South Carolina	127,000	--	--	--	--	127,000	63,500	26.0	23.6
Georgia	324,000	1,000	--	--	7,000	332,000	165,680	36.0	31.6
Florida	413,000	--	500	--	5,000	418,500	208,850	175.4	125.9
Alabama	142,000	--	--	--	16,000	158,000	77,400	21.7	17.8
Mississippi	140,000	--	--	--	158,000	298,000	133,200	36.2	29.7
Louisiana	90,000	--	--	--	19,000	109,000	52,600	27.3	18.6
Arkansas	235,000	--	--	--	--	235,000	117,500	32.7	24.3
Oklahoma	250,000	--	--	--	--	250,000	125,000	18.3	15.8
Texas	103,000	--	--	--	--	103,000	51,500	3.3	2.7
SOUTHERN	1,824,000	1,000	500	--	205,000	2,030,500	995,230	22.9	18.7
Kansas	840,000	--	--	--	--	840,000	420,000	30.1	28.5
Nebraska	102,000	--	--	--	6,000	108,000	53,400	4.8	4.5
Wyoming	--	--	--	--	4,000	4,000	1,600	1.4	1.2
Washington	35,000	--	--	--	--	35,000	17,500	5.0	4.5
Oregon	70,000	--	1,000	--	5,000	76,000	37,700	16.5	13.6
California	12,000	--	12,500	--	--	24,500	14,750	2.9	2.1
WESTERN	1,059,000	--	13,500	--	15,000	1,087,500	544,950	14.6	13.1
GRAND TOTALS	24,948,600	130,000	201,400	540,600	594,500	26,415,100	13,164,670	82.7	69.5

(1) States not listed use little or no liming materials. Sources of statistics shown: (a) Production & Marketing Adm., U.S.D.A., (b) Agricultural Experiment Stations; (c) State Extension S (d) State Departments of Agriculture; (e) County Agent Surveys; (f) Producers Surveys; (g) Farm Census.

(2) Includes all ground and pulverized forms of limestone (screenings, coarse and fine types) which are used for direct application to the soil.

(3) Consists of ground mollusk and egg shells, paper and sugar mill refuse, slag, lead mine chats, water softening sludge, and carbide refuse.

(4) Computed as: 50% for agricultural limestone; 88% for burned lime; 70% for hydrated lime; 40% for commercial marl and miscellaneous materials; 35% for farm-dug marl.

(5) Cropland acreage consists of cropland harvested, crop failure, idle or fallow land. Pasture acreage consists of pasture land plowed within 7 years (1950 Census).

From Lip to Cup...

Enough to make the difference

EXTRA POINTS for Hudson

QUALITY CONTROL
—from tree planting to sacks, Hudson is an integrated operation.

PRODUCTION UNIFORMITY
—because *all* Hudson sacks are produced on modern equipment.

RIGID INSPECTION
—a 39-poipt inspection and test program.

WRITTEN GUARANTEE
—with your assurance of satisfaction in advance.

MODERN PRINTING PLANT
—for extra display appeal and increased sales for your product.

SACK DESIGN SERVICE
—by Royer & Roger, Inc., leading industrial designers, yours exclusively from Hudson.

TIME-MOTION SERVICE
—Movies of your packing operation for efficiency study.

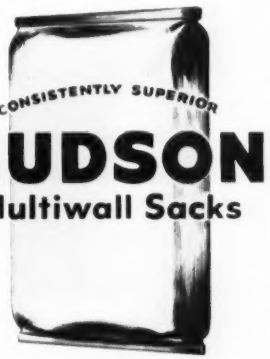
SPECIAL SERVICES
—on delivery, storage and inventory control problems.

"PROBLEM PRODUCT" PACKAGING
—specialists to study your requirements.

In many a championship match, after more than 140 equal strokes, the winner is decided by a margin from lip to cup — enough to make the difference.

With multiwall sacks, too, strong contenders are matched to supply your needs. Yet there are differences between their services and their sacks which, taken individually, may be small. But over the whole course they can save you strokes — enough to make the difference.

If you haven't checked on your packing and shipping recently, do so now when the squeeze is on your profits between rising costs and lower selling prices. You will find the extra points which Hudson can give you make tangible savings — enough to make the difference.



HERE'S ONE EXTRA POINT FOR YOUR PRODUCT'S SALES APPEAL

...Hudson's Modern Sack Printing Plant

Sharp, forceful presentation of your product identification and selling message on the multiwall sack makes a difference in the display values and sales appeal of your product. Hudson's sack printing plant, most modern in the industry, can make the difference in your product's appearance.

If your present sack design puts you at a competitive disadvantage, a new one can be developed for you by Royer & Roger, Inc., the industrial design organization whose exclusive services Hudson makes available to you without charge.

For full information, send the coupon below today.

HUDSON PULP & PAPER CORP., DEPT. NO. CF-9
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New York 22, New York

YES! We'd like further information on Hudson's modern printing plant and the sack design services of Royer & Roger, Inc.

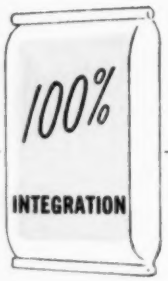
NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

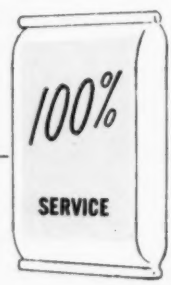
Is a 100-100-100 formula... *impossible?*



Such a mix is fantastic for fertilizer but a 100% formula is possible when you are talking about multiwall sacks for the fertilizer industry.

Hudson's 100% *integration* – from seedling to sack – means a more uniform multiwall sack. The 100% completely *modern production line* and the 100% checking and *inspection program* assures you that Hudson Multiwall Sacks are uniform, strong and resistant to damage. It's *enough to make the difference!*

Hudson gives you a 100% *guarantee*, in writing, that you will use 100% of the multiwall sacks you purchase. Even so-called "normal breakage" is covered by the Hudson guarantee. And if you are looking for a *sack design*, the services of Royer & Roger, Inc., a 100% industrial design organization, are available to you. The design you select will be reproduced with the utmost accuracy on Hudson's 100% modern, *new sack printing equipment*. It's *enough to make the difference!*



Hudson offers you 100% service on *delivery schedules* – the integrated operations gives assurance that supplies are always available – as well as storage and inventory control problems. Specially trained *specialists* are available to you to help you solve *"problem product" packaging* and to help you iron out any bottlenecks in your packaging process. It's *enough to make the difference!*

Check over this list of 100% services that Hudson Multiwall Sacks offer you.

Mail the coupon on the other side of this page for complete information.

Around the Map

ARIZONA

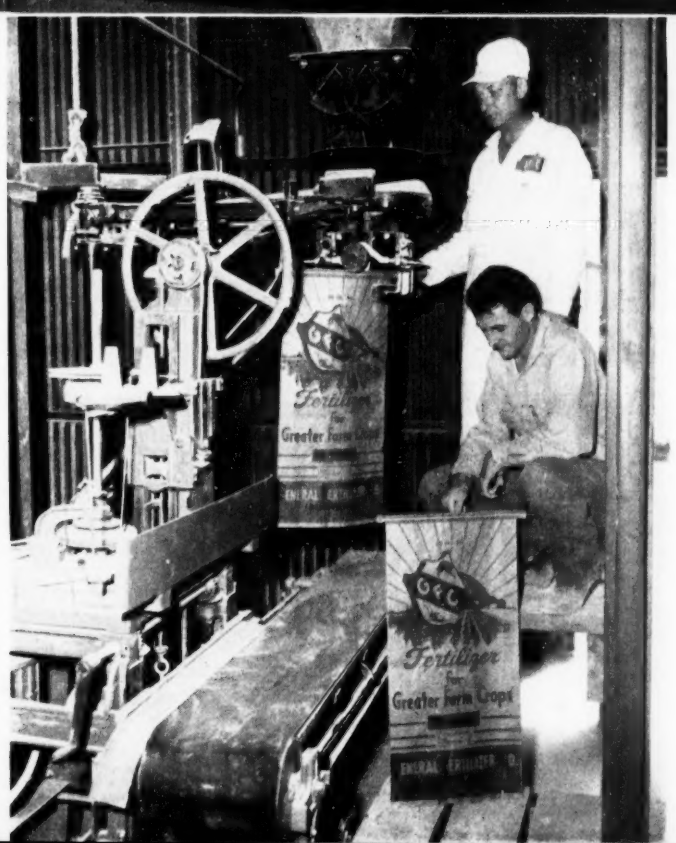
Wilbur-Ellis Company has moved its Glendale branch into new quarters at 7th Avenue and Bethany Road. The new warehouse, of structural steel with corrugated steel siding, 10,000 feet of floor space and two 12 by 60 foot loading docks. The branch was established in 1948, and has been under the management of **Bill Hart** since that time. Other officers in the Glendale branch are **J. W. Russell**, office manager and **Mrs. Joan Boone**, secretary. Wilbur-Ellis and its subsidiary, **Connell Bros. Ltd.**, do a world wide fertilizer and pesticide business.

J. B. Baird Co., Inc. of Shreveport, La. are to build a $200,000 plant for the manufacture of storage systems for anhydrous ammonia near Stockton. It will be operated by **J. B. Baird Co., Inc. of California**, a newly formed subsidiary with **Charles T. Baird** as president.

* * *

Los Angeles City Council has found that, after all, their half million dollar fertilizer pelletizing plant will not give them the $700,000 annual profit they expected when we reported on it here many months ago. Trouble: decomposed granite and other abrasives brought up the cost of pelletizing above the contract $8.46 per ton sale price.

Here is the plant of General Fertilizer, Fremont, Nebraska, reported here in August. The interior shot shows President W. A. Koepplin in the white coveralls, and Stewart Daniels, vice-president as production got under way.



FLORIDA

Coronet Division of **Smith-Douglass** has been formally set up, now that the purchase of the Plant City concern has been completed. **B. G. Dabney** remains as general superintendent. Coronet has been producing about 10% of the national output of raw phosphate, and at peak employs 300.

* * *

Davison Chemical's $11,500,000 triple superphosphate plant at Bartow, due to go into production January 1 with 200,000 annual tons, will make Davison the second largest producer of triple superphosphate. The annual report shows that Davison's sales are up 14% and income up 39% for the year ended June 30.

* * *

Swift & Co. handed out awards ranging from $7 to $10,000 to 33 Bartow employees for suggestions accepted during the fiscal year which closed July 27. Manager **H. P. Gould** says their plan covers suggestions which relate in any way to improvement of the company policies, its methods of doing business or any of its activities.

* * *

Diamond R. Fertilizer Co., Winter Garden, is now expanding in a program that will double capacity. Repair and remodeling of the plant is included in the program, as is the expansion of storage capacity. A ton mixing unit is being installed.

SOUTHERN FERTILIZER & CHEMICAL COMPANY

Main Office: Savannah, Georgia

Superphosphate — Sulphuric Acid — Complete Fertilizers
Ammoniated Superphosphate

Export — Import

Plants: Savannah, Ga., Atlanta, Ga.,
Charleston, S. C., Roebuck, S. C.

GEORGIA

Fulton Bag & Cotton Mills of Atlanta have announced the purchase from **Mente & Company** of their Savannah plant and expect to take over operations at this point at the end of August.

This plant will give Fulton a manufacturing location on the East Coast where favorable freight rates will enable them to serve more economically and effectively buyers of burlap bags, baled burlap, and other products throughout the Southeastern states.

Fulton presently operates bag factories in New Orleans, St. Louis, Kansas City, Minneapolis, Dallas, Denver, and Los Angeles, as well as in Atlanta and now in Savannah. The addition of the Savannah plant will give them an expanded coverage in serving the whole country.

* * *

Chemical Enterprises, heretofore operating only in the Central states, has now entered the South with the acquisition of a "substantial" interest in **Southeastern Liquid Fertilizer** of Albany, which will continue as an independent operating unit. Chemical Enterprises will supply new capital which will be used to expand the new storage facilities for anhydrous ammonia and new distribution stations.

IDAHO

Monsanto Chemical is planning to build a second electric furnace for production of elemental phosphorus at their Monsanto plant, according to vice-president **J. L. Christian,** general manager of their phosphate division. When the first furnace was built at Monsanto in 1951, provision was made so that supporting operations would take care of additional furnaces as needed. **J. L. Whiteside** is manager of the plant at Monsanto.

* * *

Fannin Gas & Equipment Company are adding anhydrous ammonia to the services of the **Valley L. P. Gas Company** at Montpelier, according to vice-president **Ernest Fannin,** Phoenix, Arizona.

IOWA

Fred Scheer and **Clayton Anderson** are building a $100,000 fertilizer plant at Sioux City, which is due to be ready by next Spring. Immediate production is scheduled for 30,000 annual tons.

MICHIGAN

Michigan Farm Bureau is building a $550,000 fertilizer plant at Kalamazoo, with **John J. Harte** as architects.

MINNESOTA

Northwest Cooperative Mills, St. Paul, are planning to double floor space of their Winona plant, spending $200,000, according to **G. O. McMillin,** manager of the fertilizer division. Completion by December 1 is planned.

DOLOMITIC LIMESTONE

ANALYSIS GUARANTEED

. . . 60% Calcium Carbonate
. . . 39% Magnesium Carbonate

LIMESTONE

WILLINGHAM-LITTLE STONE COMPANY

1201-4 Healey Building, Atlanta 3, Ga.

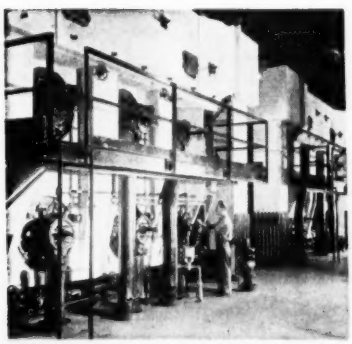
"39 Years Service to the Fertilizer Industry in the Southeast"

Dean of the fertilizer industry in the Southeast is 84-year old J. Ross Hanahan, president and founder of Planters Fertilizer and Phosphate Company.

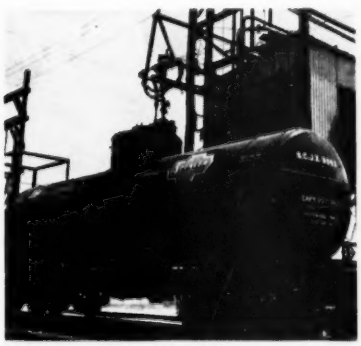
This aerial view shows the tremendous size of Planters Fertilizer and Phosphate Company plant in Charleston, South Carolina. Established in 1906, Planters now supplies farmers in both North and South Carolina from modern plants in Charlotte and Charleston. Their slogan: "For the Land's Sake, Use Planters Fertilizers."

Planters Fertilizer & Phosphate Co.

. . . Another Spensol User



Millions of dollars' worth of highly specialized equipment is necessary in producing SPENSOL (Spencer Nitrogen Solutions).



Spencer ships SPENSOL to many of America's leading mixers. Dependable service has made SPENSOL a nation-wide favorite.

Production problem? Let our Technical Service staff help you. There's no charge — even if you're not a Spencer customer.

SPENCER

America's Growing Name in Chemicals

SPENCER CHEMICAL COMPANY, Dwight Bldg., Kansas City 5, Mo.
District Sales Offices: Atlanta, Ga.; Chicago, Ill.; Memphis, Tenn.;
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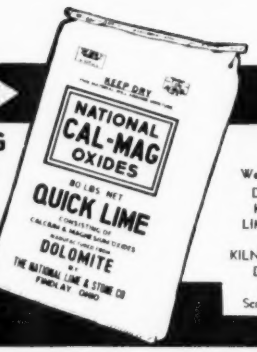
CAL-MAG OXIDES
CUT YOUR COSTS WITH

Unexcelled for its superior Dehydrating, Neutralizing, and Curing factors in the preparation of better fertilizers. Write for complete information.

PROMPT SHIPMENTS
Three railroads serve our Carey, Ohio plant--assuring prompt delivery--everywhere.

CAL-MAG OXIDES
MgO 40.39
CaO 58.07
TNP 203.88



We Also Produce
DOLOMITIC HYDRATED LIME (165 TNP)
and
KILN DRIED RAW DOLOMITE (107 TNP)
Screened to size

The NATIONAL LIME and STONE CO.
General Offices • • • • • FINDLAY, OHIO

MISSOURI

Missouri Farmers Association Joplin plant for which, as reported here last month, ground was broken July 22, will have as manager **Walter Horn**, with **J. L. Silvey** as supply manager. The plant will cost $3,500,000 and should produce 70,000 tons annually to add to the 100,000 annual tons turned out by the MFA plants at Springfield and Maryland Heights. At the dedication, **E. A. Pasha**, vice-president of **Merritt-Chapman and Scott**, who are building the plant, presented the trowel used in laying the cornerstone to **Fred V. Heinkel**, president of MFA.

* * *

Thurston Chemical will this year distribute in Kansas **TVA** fertilizers for field test demonstrations. The uses chosen for the Kansas demonstrations are: Pasture renovation and improvement, establishment of grasses and legumes on eroded land, fertilization of sod waterway, fertilization of brome grass and other grasses for seed production and fertilization of wheat for winter pasture.

NEBRASKA

Tri-State Fertilizer Company, Inc. was formed August 6, according to word from **Wendell Glaspey**, partner in the **Blue Valley Fertilizer Co.**, Marysville, Kansas. A modern fertilizer plant will be built at South Sioux City, engineering and granulation equipment to be furnished by **Blue Valley Engineering Company** of Marysville. Capacity will be 20,000 annual tons—all granular.

* * *

National Fertilizer Company's new plant at Fairbury has gone into operation, using the building there which was formerly a railroad roundhouse, as has been reported here previously. The production, according to plant manager **Jerry Mitchell** will be about 15,000 annual tons. **Harold Tabor** is superintendent. National's other plants are in Des Moines and Denver.

NEW MEXICO

Sunshine Plant Food Company is in full scale operation at Clovis with their new $75,000 fertilizer plant, which processes livestock manure into a fine-ground, uniform, seed-free fertilizer. As previously reported here, the plant was financed by five Clovis men, in cattle and other businesses.

At the Southern States Phosphate and Fertilizer Co., Savannah, Georgia, a Thew-Lorain made Model TL15-J Loram shovel supplies young blood to assist the 38-year old Lorain Type "O" which has served there so long in the handling of superphosphate

NORTH CAROLINA

Farmers Cooperative Exchange, Salisbury, is boosting its mixing plant 3½ times, from 7,000 annual tons to 25,000, with new equipment due to be in operation for this seasons business, according to **V. D. Estes** fertilizer director.

OHIO

American Agricultural Chemical Company has announced the construction at Cairo of a 24,300 square foot standardized **Luria** wet-mix steel building, and an additional dry-mix building by **A. J. Sackett** who will also supply and install the dry-mixing equipment. The plant is scheduled for production this Fall.

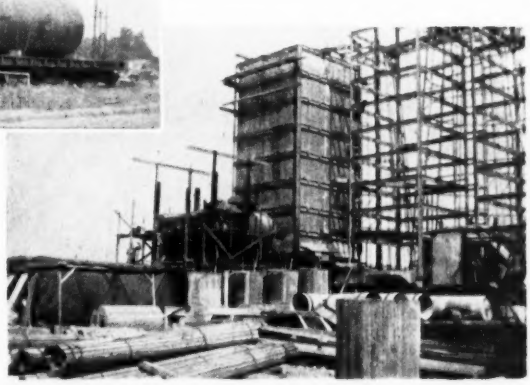
* * *

Hilton-Davis Chemical Co., Cincinnati, won a "neighbor-trouble" case in court when judgement was given to them in a trial concerning "noxious odors," in which the neighbor asked $30,000 damages because the aforesaid noxious odors emanted from a city sewer two miles from the plant. The company dumps into a closed sewer, and the judge evidently felt the company could hardly be blamed if the city sewer became an open sewer down where the neighbor lives.

OREGON

White Star Concentrates, Portland, is expanding by the addition of fertilizer and pesticides departments. Owner **Robert Suefort** has

. . . Lead Lined Equipment or Construction of Complete Acid Plants



SOUTHERN LEAD BURNING COMPANY

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ASHCRAFT - WILKINSON CO.

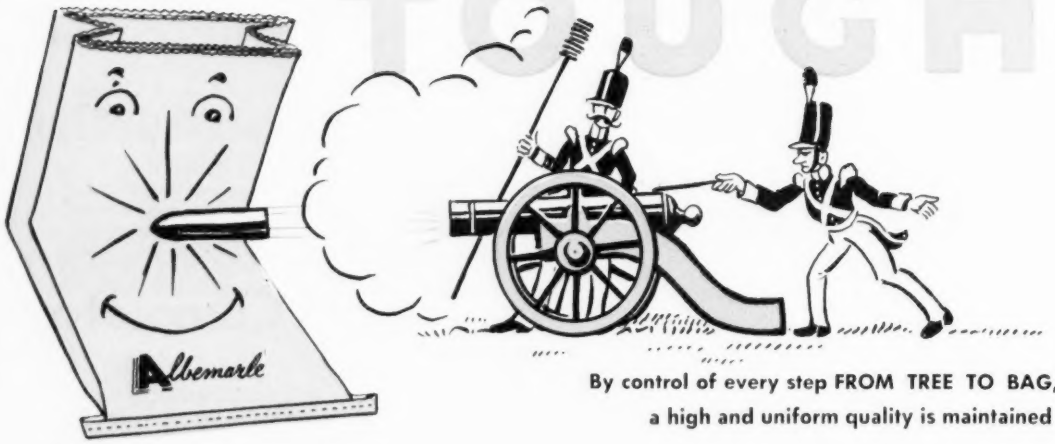
Fertilizer *Oil Seed*

Materials *Meals*

Home Office: ATLANTA, GA.
Cable Address
ASHCRAFT

Offices: NORFOLK, VA., CHARLESTON, S. C.
TAMPA, FLA., JACKSON, MISS., COLUMBUS, OHIO

Exclusive Distributors: DUVAL SULPHUR & POTASH COMPANY
AMMONIATES — FEED STUFFS — SULPHUR
INDUSTRIAL AND AGRICULTURAL
CHEMICALS



By control of every step FROM TREE TO BAG,
a high and uniform quality is maintained

Multiwall Bag Division

ALBEMARLE PAPER MANUFACTURING COMPANY

EASTERN SALES OFFICE • New York, New York

MIDWEST SALES OFFICE • Chicago, Illinois

RICHMOND, VIRGINIA

SOUTHERN SALES OFFICE • Baltimore, Maryland

put **G. A. Fitzpatrick** in charge of the new department. He was formerly with **Pacific Supply Coop.**

PENNSYLVANIA

Central Chemical Corporation of Lebanon, has changed its name, effective August 17, to **Lebanon Chemical Corporation.**

TENNESSEE

Grace Chemical are displaying at the New York Stock Exchange a working model of their new $19,000,000 plant at Memphis, as part of a large panel, describing in pictures and words the activities of **W. R. Grace & Co.**

TEXAS

Kipfer Chemical were the first to put a commercial structure on the Arroyo Colorado at Rio Hondo, where they have a fertilizer plant with dock facilities. At Harlingen they process phosphate rock which is distributed throughout the Valley.

UTAH

Western Fertilizer, Salt Lake City, is high bidder for 200 acres of government land in Idaho, available for lease for phosphate production.

* * *

Mill Creek Chemical, a new concern, are planning a $9,000,000 anhydrous ammonia plant at Salt Lake City with a daily capacity of 180 tons. Production is scheduled for early Spring 1955. **Glore, Forgan & Co.,** New York investment bankers are handling organization and financing. **A. C. West,** Glore, Forgan partner is president; **John Fenelly,** also a Glore, Forgan partner, is vice-president; **John Kilgore,** Dallas attorney is secretary-treasurer.

* * *

Houdry Corp. may build an $18,500,000 ammonia plant in Utah. Officials of the company, and of **Catalytic Construction** have studied sites in Juab and Sanpete counties. Houdry and Catalytic are associated with **Utah Chemical** of Salt Lake City, which has already stated its plans to erect a plant for production of ammonia from natural gas.

VIRGINIA

P. K. Hunt & Son's crab meat fertilizer plant, Hampton, was virtually destroyed with a $50,000 loss when a mysterious blaze, originating in the bagging room, spread over the entire plant before the first alarm was sounded.

WEST VIRGINIA

Carstens Packing Co., Tacoma, expect to be in production by the first of the year with their $175,000 fertilizer plant now building.

* * *

Columbia-Southern Chemical, wholly owned subsidiary of **Pittsburgh Plate Glass,** expect to be in

production by late 1954 with the ammonia plant they are building at Natrium. They plan to use their own by-product hydrogen.

AUSTRALIA

Mobile Industrial Equipment Pty. Ltd., has been given a franchise by DuPont to manufacture certain agricultural products, the active ingredients for which will be exported to them from the U. S.

BRAZIL

National Petroleum Council will be in charge of a nitrogen fertilizers plant for which the Government has authorized a credit of $4,370,000. Foundations are already laid, and Germany is shipping some of the machinery for ammonia, nitric acid and ammonium nitrate.

ENGLAND

Esso Petroleum's new sulphur recovery plant at their Fawley refinery which can cut the dollar imports by nearly 4 per cent. The plant is recovering at the rate of 14,000 annual tons. The textile industry will absorb most of this output.

GERMANY

Burbach Kaliwerke AG, Wolfenbeuttel, has increased its potash output 33%, as compared to the overall German increase of 19%. Burbach produced 249,000 tons last year. West Germany's 1,300,000 tons were roughly 25% of world potash production for 1952.

INDIA

Sindri Fertilizers and Chemicals Ltd., the largest single manufacturing unit in India, has reached a point where its Chairman, **A. K. Chanda** believes that it can take over distribtion from the Central Fertilizer Pool. The $48,000,000 operation has under construction a coke oven plant which is expected to materially reduce the cost of ammonium sulphate production. The plant will have a battery of 60 ovens, turning out 600 daily tons of coke. This is expected to save Rs. 18 lakhs annually.

Their apprentice program is well under way **Manjusha Bose,** the first Indian girl to obtain a degree in chemical engineering from the college at Jadavpur, is among the first group.

In the **Upper Sind region,** large posters have been put up by the agriculture department, explaining the uses of American chemical fertilizers, and a 50% increase in their use is expected.

The Provincial Government is proposing to set up a fertilizer plant at Kahmoro, in Sind, and the Pakistan Government is planning to help by running natural gas pipe lines to the site. The Government will open over 250 fertilizer depots in

(Continued on page 63)

STORE
BIG
VOLUME
at
LOW
COST
in
MARIETTA
concrete
silos
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Safety

SUMMARY STATEMENT OF THE DATA OBTAINED FROM 1952 FERTILIZER SECTION QUESTIONNAIRE—

By Stewart A. Washburn
Staff Representative to the
Fertilizer Section,
National Safety Council

In September of 1952 the Fertilizer Industry Advisory Committee of the Chemical Section sent out a questionnaire to some 1,200 domestic and foreign plants asking for information on the 1951 accident experience of the Fertilizer Industry. Questionnaires were returned from 180 operating units representing close to a 15 per cent response which, as this type of questionnaire survey goes, is very good. As will be shown later, this return has a much greater significance than the 15 per cent response would seem to indicate.

Of the 180 returned questionnaires, those from 174 domestic operating units were usable and 1 from a foreign combine was also usable.

Fourteen returns listed the number of injuries reportable under the American Standard Method of Compiling Industrial Injury Rates, as was asked in the questionnaire, but failed to include time charges. Therefore the exposure used to compute frequency was a little higher than that used to determine severity.

The 174 domestic fertilizer producers reported a total exposure for the year 1951 of 37,923,000 hours with 1,260 lost-time accidents and a total time charge of 83,275 days. The frequency rate for the reporting units is 31.80 lost-time accidents per million man-hours of exposure; the average frequency rates for National Safety Council Industrial Members reporting for 1951 is 9.06. The severity rate computed from the adjusted figures is 2.36 days lost per 1,000 man hours of exposure; the industry average for Council Industrial Members reporting for the year 1951 is 0.97.

The foreign exposure reported was 3,750,000 man hours with 561 lost-time accidents, and 4,416 days charged. The frequency rate for this exposure is 182.44 and the severity rate is 1.44. (These figures are given for the sake of comparison only. They do not affect the exposures and rates given elsewhere in this report).

Forty domestic operating units with individual exposures of 50,000 hours or less, reported a total exposure of 1,205,000 hours, and had a group frequency rate of 43.98 and a group severity rate of 1.05. In this group the individual frequency rates varied from 0.00 to 117.65; the individual severity rates varied from a low of 0.00 to 10.71. Nineteen reporting units within this group had both a zero frequency and a zero severity rate.

Forty-seven operating units with individual exposures of from 51,000 to 100,000 hours reported a total exposure of 4,175,000 hours. This group has an average frequency rate of 28.26 and a severity rate of 10.38. In this group the individual frequency rate varied from a low of 0.00 to 117.02; the severity rates varied between 0.00 and 51.72. Within this group thirteen operating units reported a zero frequency rate and a zero severity rate.

Fifty-eight units operating between 101,000 and 250,000 hours reported a total exposure of 8,749,000 hours, with frequency rate of 20.91 and a severity rate of 1.96. The individual frequency rates for this group varied from a low of 0.00 to 222.22; the severity rates varied from 0.00 to 54.34. Of this group 19 reporting units had a zero frequency and severity rate. Finally, 29 units, with individual exposures greater than 251,000 hours, reported a total exposure of 23,794,000 hours. The frequency rate for this group was 38.08; and its severity rate 1.326. The individual frequency rates in this size group varied from 0.00 to 587.85. The severity rates varied from 0.00 to 9.58. Only one operating unit in this size group reported a zero frequency and severity rate.

For the same years, 1951, 44 member fertilizer companies reporting to the National Safety Council had an average frequency rate of 14.39 and a severity rate of 2.38. The Bureau of Labor Statistics reports a preliminary frequency rate of 22.4 for the Fertilizer Industry in 1951.

As was suggested earlier this survey of the fertilizer industry's accident experience for the year 1951 has greater significance than the 15% response would indicate. The Annual Survey of Manufacturers: 1949-1950 published by the U. S. Department of Commerce shows a total exposure for the fertilizer industry for the year of 1950 of about 63,108,000 hours for 31,393 employees. The industry's 24,701 production workers had a total exposure of 49,656,000 hours.

Figures are not available for 1951 hourly exposure; but since the 1950 figures are not significantly different from those of the period 1947 through 1950, it can be assumed that the 1951 figures will also

Group photographed when the National Safety Council's award of merit was presented to "The Davison Sentinel", The Davison Chemical Corporation's safety magazine for employees. Marlin G. Geiger, vice chairman of the board of Davison; Miss Helen O'Hara, editorial assistant to A. B. Pettit, the company's supervisor of industrial health and safety; George W. Elste, president of the Baltimore Safety Council, and Mr. Pettit.

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be of this order of magnitude. If this is so, then the 38 million hours reported in this survey represents better than 60% of the total industry exposure.

If then, 60% of the industry exposure has a 31.80 frequency rate and a 2.36 severity rate, what would a picture of the total industry exposure look like. It is probably safe to assume that both the severity and the frequency rates would be higher. For of the two probable reasons for not reporting in this survey both indicate high rates. First, no accident records and this usually means high rates, and second, accident records showing rates so high as to be thought embarassing.

SAFETY SECTION MEETING CHICAGO OCTOBER 21-22

Wednesday Afternoon
Hamilton Hotel, Chicago

2:00 Report of the General Chairman. John E. Smith, Dir. of Safety, The Spencer Chemical Co.

2:20 Report of the Nominating Committee and Election of 1953-54 Officers. J. S. Fields, Industrial Relations Supt., Philblack Plant, Phillips Chemical Co. Dr. S. L. Rankin, Medical Dir., Petroleum Chemical Div., Employee Relations Dept., E. I. du Pont de Nemours & Co., Inc.

2:30 Safety—A Way of Life.

3:30 Case Histories. (Panel Discussion). (A panel of six selected Directors, Factory Superintendents and Production Superintendents will each give the details of one outstanding industrial accident which has occurred in his plant within the last year or two. They will describe the cause of the accident, tell of the investigations conducted and then what steps were taken to prevent recurrence of a similar accident. Each accident will be discussed from the floor.) Discussion Leader — Harold R. Krueger, Production Mgr., The Snyder Chemical Co., Inc.

Participants: R. F. Bennett, Pres., Farm Fertilizers, Inc. Victor L. Cherry, Plant Safety Insp., Mathieson Chemical Corp., T. J. Clarke, Personnel Dir., G.L.F. Soil Building Service, Ralph E. Fraser, Vice-Pres., Summers Fertilizer Co., Inc., W. A. Stone, Supt., Wilson & Toomer.

4:30 Report on Safety Contest. Curtis A. Cox, Assistant Mgr., Manufacturing Dept., Virginia-Carolina Chemical Corp.

4:40 Announcements.

4:30 Announcement of CO_2 Blasting Demonstration by Cardox Corporation at the International Minerals and Chemicals Company's Fertilizer Plant in Chicago Heights. Tickets will be sold for chartered buses which leave from the front of the Hamilton Hotel at 8:00 a.m., Thursday morning. Curtis A. Cox, Assistant Mgr., Manufacturing Dept., Virginia-Carolina Chemical Corp.

Thursday Morning

8:00 Busses leave from Hamilton Hotel for CO_2 Blasting Demonstration at Chicago Heights.

9:00 CO_2 Blasting Demonstration. G. M. Henry, Mgr., Lime and Steel Div., Cardox Corp.

Thursday Afternoon

Presiding: General Chairman Elect.

2:00 Goals of the Fertilizer Section in 1954. General Chairman Elect.

2:15 Blue Print for Survival. Dr. Neal Bowman, National Association of Manufacturers.

3:00 State Safety Department—Friend or Foe. Forrest H. Shuford, Commissioner of Labor, State of North Carolina.

3:30 The Cost and Profit of a Successful Safety Program. Ralph J. Crosby, Assistant Vice-Pres. in Charge of Accident Prevention, Marsh & McLennan, Inc.

4:00 General Question and Answer Period. (The chairman will ask for questions from the floor regarding accident prevention in the fertilizer industry. This will not be a panel discussion. There will be no speeches and no experts selected to answer. The questions will be from and answered by the group.)

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Fulton Bag Safety Record

More than 1,000 employees at Fulton Bag & Cotton Mills were guests of the Company at a series of banquets held at the plant cafeteria in recognition of their outstanding safety record. The employees represent 28 departments which completed 2,195,368 man hours without a single lost-time accident during the past year.

Company officials presented engraved plaques to the three departments having the highest safety records as established under the point system. An additional presentation of a $100.00 check was made to the employee who submitted the best safety slogan during the past twelve months period.

Fulton initiated the safety contest program two years ago. Officials report the program has not only made a substantial reduction in the accident rate, but has stimulated production throughout the plant.

Eston Offers New Fire Extinguisher

A new type of fire extinguishing agent, several times as efficient as carbon tetrachloride, now is in full-scale production at Eston Chemicals Division of American Potash & Chemical Corporation, it was announced today.

The compound is known chemically as methylene chlorobromide, and is commonly referred to as "CB." It was first developed in Germany during World War II, but only recently began to gain wide acceptance in this country for use in fire control equipment.

In addition to being several times as efficient as carbon tetrachloride, CB has a much lower level of human toxicity. It is being used almost exclusively in all the newer types of U. S. Air Force planes. An added advantage in aviation use is a substantial weight saving per unit of effectiveness, as compared with other fire extinguishing agents.

Eston Chemicals is exploring further uses of CB both in the military and civilian fields.

OBITUARIES

Thomas J. Davis, 54, manager of the Davison Chemical Savannah, Georgia plant, of a heart attack, August 6.

Walter Henry Klee, vice president of Naco Fertilizer, Jacksonville, died there September 3 in hospital, following a short illness.

Mrs. M. S. Malone, wife of M. S. Malone, International Minerals and Chemicals, Atlanta, in Atlanta August 3.

James W. Pierce, 51, assistant general sales manager of the American Agricultural Chemical Co., New York, died at his home in East Orange, N. J., August 17. He had been in ill health for several months.

William Schultze, 86 pioneer chemist in the synthetic nitrogen industry, for the past 15 years with the Hopewell plant of Nitrogen Division, died August 17th in a Hopewell hospital.

George Sodat, 60, also for many years with Nitrogen Division at Hopewell, died August 17 in a Hopewell hospital.

Over 500 Idlers In Link-Belt Book

More than 500 belt conveyor idlers in 34 types, designed to meet practically every requirement, are pictured and described in a new 48-page Book No. 2416, just released by Link-Belt Company.

A copy of Book 2416 will be sent to interested readers on request. Write them at 307 N. Michigan Ave., Chicago, Ill.

"Highway" Features Application Equipment

Highway Equipment Company of Cedar Rapids, Iowa is featuring "New Leader" equipment which should be of special interest to all who are in or planning to enter contract application service work. They produce two major pieces of equipment which serve this field.

Their "New Leader" self unloading bulk transport has a capacity up to twenty-five tons divided into 5 ton compartments, and may also be arranged to haul bag goods instead of bulk. Being self-unloading the transport can be left at the field, while the tractor truck is left free to pick up another load. Transports come from 11 to 40 feet in length.

Their spreader is attachable to their truck, and is available with 19 or 23 foot spreads. It is built with a streamlined attachment hood, and conserve lime or fertilizer even with strong winds blowing, assuring an even and uniform spread.

For full details write them at Cedar Rapids.

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CHAINS AND SPROCKETS

Jeffrey Hercules Chain and "CHAIN SAVER" Sprockets make the best wearing combination you can put into your plant. Chains can be reversed—have full diameter, D-shank pins—oval eccentric barrel. Sprockets have flanged edge—takes part of the load.

Also Digger and Loaders, Pulverizers, Conveyors, Elevators, Chains and Attachments, Feeders, etc.

THE JEFFREY MANUFACTURING COMPANY
933 North Fourth Street, Columbus 16, Ohio

MARKETS

ORGANICS: All the available Blue Lupine Seed Meal has now been sold and there is only a possibility they might have a little surplus later. Domestic Nitrogeneous Tankage has been advanced to $3.50 for September December, $3.75 for January forward f.o.b. Carrollville, Wisconsin, with limited quantity left. Another producer's price is $4.40 f.o.b. Norfolk September December shipment; $4.05 f.o.b. Chemical, Illinois, September December shipment. $4.65 January forward f.o.b. Norfolk and $4.30 f.o.b. Chemical, Illinois January forward.

CASTOR POMACE: Sales have been made at $28.50 per ton in 100 ton lots or more and $30.00 per ton for less than 100 ton lots September December f.o.b. Northeastern production points.

DRIED BLOOD: Unground Dried Blood f.o.b. Chicago is indicated at around $5.50 $6.00 per unit of Ammonia, bulk. The New York market is around $5.00 per unit of Ammonia.

POTASH: Heavy renewals of Domestic contracts for the new season have been made and no changes in the domestic prices have been noticed.

GROUND COTTON BUR ASH: This source of Potash, primarily in the form of Carbonate of Potash, continues at 50c per unit K20, f.o.b. production point.

PHOSPHATE ROCK: Slight easement in the supply has been noted though the domestic movement has not slacked.

CALCIUM AMMONIUM NITRATE: Limited supplies continue available at a few Atlantic and Gulf ports. Prices remain $51.25 per ton, in bags, f.o.b. cars at the ports.

GENERAL: Interest in fertilizer materials at the moment, is rather quiet due to holidays.

FERTILIZER TAX TAG SALES AND REPORTED SHIPMENTS
(In Thousands of Equivalent Short Tons)
Compiled by THE NATIONAL FERTILIZER ASSOCIATION

STATE	July 1953	July 1952	June 1953	June 1952	Jan.-June 1953	Jan.-June 1952	Apr.-May-June 1953	Apr.-May-June 1952	July-June 1952-53	July-June 1951-52
Virginia					641	653	322	331	832	856
N. Carolina			48	63	1,563	1,584	685	691	1,850	1,901
S. Carolina	8	10	13	17	772	743	192	200	1,001	1,002
Georgia	37	30	77	98	1,129	1,102	684	694	1,421	1,354
Florida	44	59	60	67	728	666	243	134	1,349	1,217
Alabama			32	40	889	874	332	358	1,128	1,101
Tennessee	19	16	65	74	437	450	307	310	578	657
Arkansas	24	18	34	34	235	294	137	196	306	358
Louisiana	14	8	15	17	218	241	101	101	313	309
Texas	16	20	38	29	373	378	161	139	577	600
Oklahoma			4	5	74	110	27	48	146	235
TOTAL SOUTH	162	161	386	444	7,059	7,095	3,191	3,202	9,501	9,590
Indiana	8	95	14	62	579	554	146	203	1,114	1,038
Missouri	18	65	26	18	478	474	181	201	874	764
TOTAL MIDWEST	26	160	40	80	1,057	1,028	327	404	1,988	1,802
California										
TOTAL OTHER										
GRAND TOTAL	188	321	426	524	8,116	8,123	3,518	3,606	11,489	11,392

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the sterilized organic conditioner

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Fur-Ag is an inexpensive organic conditioner that is produced in volume and shipped to you *on schedule* the year around. Fur-Ag reduces bag set, promotes drillability, speeds up curing in the pile and provides bulk. It is sterilized—free from plant diseases, insects, weed seeds—and being dark in color makes a rich-looking piece of goods. Write today for complete information—Bulletin 127.

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345 The Merchandise Mart, Chicago 54, Illinois

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Nitrogenous Materials
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"Riceland" Ground Rice Hulls
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Hyster Offers Free Operator's Booklet

The fifth edition of the popular "How To Operate A Lift Truck" has been published by Hyster Company and is now available again free to lift truck operators, supervisors, safety engineers and other interested industrial and governmental personnel.

The two-color cartoon technique used in the booklet is designed for easy reading and is packed with information about the operation of a lift truck, preventive maintenance, safety and basic materials handling. Drawings for setting up an obstacle course are also included.

Prepared for use as part of an operator training program, "How To Operate A Lift Truck" is slanted for both the beginner and the experienced operator. It can be studied individually by the operator himself or used as a guide by instructors.

The booklet is available from Hyster Company, 2902 N. E. Clackamas St., Portland, Oregon; or from your nearest Hyster dealers.

S-A Offers Two Bulletins

Two new bulletins have been published by Stephens-Adamson Mfg. Co., Aurora, Illinois, and will be sent on request. They are: Bulletin 753, Car Pullers, a review of the equipment made by S-A in this field; 8 pages. Bulletin 853, Hand and Motor Winches, a 4-page, illustrated presentation, complete with photos and full data, on their motor winch line.

UDET Appoints Two Agencies

Two new sales agencies have been appointed by Universal Detergents, Inc., Long Beach, California makers of Udet, Udex and Udetf, alkyl aryl sodium sulfonates, and Udesolve, a line of aromatic hydrocarbon solvents.

Donald McKay Smith, Inc., 830 Hanna Bldg., Cleveland 15, Ohio, and Emmet D. Griffin, Jr., 916 Jones Law Bldg., Pittsburgh 19, Pennsylvania, have become representatives effective August 15, it was disclosed by B. R. Bryant, general manager of Universal Detergents, Inc.

Bulkmaster Is Self Loading, Unloading

A feature of the "New Leader" Bulkmaster Transport produced by Highway Equipment Company, Cedar Rapids, Iowa, is its ability not only to unload itself by means of a hydraulic auger, but is also self-loading through a removable access panel at the rear, when conveyors are used to empty box-cars. Full information about the Highway line will be sent on request.

Sept. 15. 1892. P.D.del.

M-515

Taken from our drawing file on the 515 Sacking Scale.

Ruskin is credited with having said: "There is hardly anything in the world that some men cannot make a little worse and sell a little cheaper. People who consider price only are this man's lawful prey."

(Courtesy of E. F. Houghton & Co.)

AUTOMATIC SCALE COMPANY

INCORPORATED

Fertilizer Division

591 Hudson St., New York 14, N. Y.

A letter from the president of the new

CANADIAN AGRICULTURAL CHEMICALS ASSN.

Replying to your letter of 24th July, I think it is fair to say that the new Canadian Agricultural Chemicals Association is largely the Canadian counterpart of the National Agricultural Chemicals Association in the United States. Both cover the same fields of activity, viz., the supply of agricultural chemicals other than fertilizers. In both countries, the manufacturers of fertilizers are serviced by their own separate trade associations.

In view of the above, I think that our Association may expect to have largely the same problems as those of the N.A.C.A. after allowing for the difference that exists in the set-up of governmental control in this country as compared with the U.S.A. As you probably know, legislation in these matters is handled by the individual States in the U.S.A. while in Canada it is a question of Federal control so that co-operation with governmental departments is a simpler procedure here than it is with you.

To quote from the memorandum of Agreement of the new Canadian Association, its principal objects are as follows:

(a) To promote, foster and advance, in a manner consistent with the public interest, the progress and development of the industries which manufacture, produce, process and/or distribute agricultural chemicals of all kinds;

(b) To foster, encourage and support research into all branches of the said industries, including the production, distribution and consumption of all their products;

(c) To co-operate with federal, provincial and other agencies in matters pertaining to the said industries;

(d) To study and inform members of the Association with regard to federal, provincial or other legislation, whether existing or proposed, which may affect the said industries.

As the Association has only recently been organized, it is still too early to report progress in the above fields of activity.

Yours very truly,
J. H. D. Ross
President

Pacific N.W. Convention Plans

The Pacific Northwest Plant Food Association has announced its coming annual convention will be held November 4-5 at the Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia. Members are advised to make their reservations direct to the hotel—and to look into the Canadian restrictions on advertising matter, liquor etc. All sorts of entertainment features are planned, around the facilities of the hotel.

New Jersey Fertilizer Conference

Lipman Hall
College Of Agriculture
New Brunswick, N. J.
Thursday, September 24, 1953
Program

10:30 Greetings—Dean Wm. H. Martin.

11:00 Progress In Trace Element Research—Firman E. Bear.

11:30 What The Fertilizer Industry Desires In Institutional Research — Russell Coleman.

Lunch

1:45 A New Concept Of Soil-Test Servicing—Roy L. Flannery.

2:05 Fertilizing New Jersey Fruit Crops—Ernest G. Christ.

2:30 10-Minute Reports On Current Fertilizer Work In New Jersey.

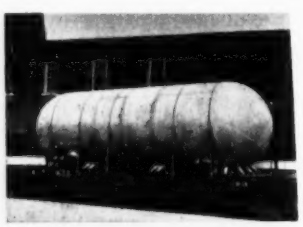
A. High Nitrogen and Potassium Fertilization Of Alfalfa — E. R. Purvis.

B. Chelated Trace Elements—H. F. Perkins.

C. Spring Applications Of Nitrogen To Small Grains—R. S. Snell.

D. Fertilizing Orchard Grass For High Yield—C. H. Ramage.

E. Nutrient Foliar Sprays—O. W. Davidson.



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9'-0" Diameter x 30'-0" Long
12,825 Gallons

"Cole" can furnish tanks made of **steel, aluminum** and **stainless steel** — built in accordance with ASME Code to meet all insurance requirements. Measuring tanks of Stainless Steel are carried in stock.

We invite your inquiries for Storage Tanks to handle Ammonia and Nitrogen Solutions. Anhydrous Ammonia—complete with fittings. Also Elevated Water Tanks, Acid or Oil Storage Tanks, Bins, Boilers, Stacks, etc.

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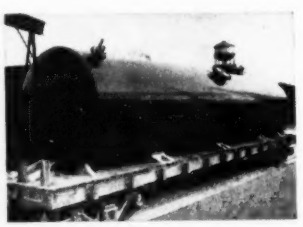

STEEL TANK
8'-6" Diameter x 38'-6" Long
16,500 Gallons

CLASSIFIED ADVERTISING

For Sale, Exchange and Wanted Advertisements, same type now used, EIGHT CENTS a word for one insertion; TWELVE CENTS a word for two insertions; FIFTEEN CENTS a word for three insertions, and FOUR CENTS a word for each insertion more than three; ADVERTISEMENTS FOR THIS COLUMN MUST BE PAID IN ADVANCE.

FOR SALE: ROTARY DRYERS FOR GRANULATION. 1-7' x 60' Rotary Kilns. These make excellent heavy duty long life direct heat Rotary Dryers by installing lifting flights. Other Rotary Dryers in stock: 8' x 54', 6' x 42', 5' x 40', 4'6" x 35', 4' x 30' and 3' x 50'. Send us your inquiries for Jaw, Gyratory and Roll Crushers, Ribbon and Drum Mixers, Pulverizers, Bucket Elevators Hammer Mills, Vibrating Screens, Belt Conveyors. We buy your idle machinery. Our 36th year. CONSOLIDATED PRODUCTS COMPANY, INC., 14 PARK ROW, NEW YORK 38, N. Y.

WANTED: EXCLUSIVE DISTRIBUTORS FOR LIQUID NITROGEN FERTILIZER. TERRITORIES OPEN. BOX #51, c/o COMMERCIAL FERTILIZER, 75 3rd St., N. W., Atlanta, Ga.

WANTED:—Combination Acid Maker-Lead Burner for Sulphuric Acid Plant located in Alabama. Write box #53, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Ga.

STEEL TANKS FOR SALE: Dished heads—all welded. Excellent for storing liquid fertilizer, chemicals, etc. At Marion, Ind.—(4) 12,700 gal. (2) 11,000 gal., (2) 10,500 gal. At Norfolk, Va.—(3) 5,800 gal. At Tonawanda, N. Y.—(5) 7,000 gal. At Reading, Pa.— (9) 4,600 gal., (5) 4,300 gal., (2) 3,800 gal. PERRY EQUIPMENT CORP. 1426 N. 6th St., Philadelphia 22, Pa.

FOR SALE: One ½ ton Fertilizer Mixer; One ½ ton Fertilizer Shaker Screen; One 1 ton Dothan Hammermill. All in good usable condition. Includes also certain new replacement parts at sacrifice price. Florida East Coast Fertilizer Co. P. O. Box 455, Homestead, Florida.

UNUSUAL OPPORTUNITY in old, well established fertilizer concern in Midwest for a successful plant superintendent who has proved that he can coordinate production and maintenance in large plant to secure maximum efficiency. Fertilizer experience helpful but not essential. Salary open. Give age, education, experience and salary requirement. Box 56, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Ga.

WANTED PLANT SUPERINTENDENT: Unusual opportunity in old, well established fertilizer concern in Midwest for a successful plant superintendent who has proved that he can coordinate production and maintenance in large plant to secure maximum efficiency. Fertilizer experience helpful but not essential. Salary open. Give age, education, experience and salary requirements. Box 56, c/o Commercial Fertilizer, 75 3rd St., N. W., Atlanta, Ga.

Position Wanted as General Manager—27 years experience in fertilizer industry, including 9 years research with large corporation; thorough knowledge of all types of fertilizer operation—manufacturing, sales, purchasing and chemicals. Age 46; presently employed as general manager operating a blending plant, capacity 20,000 tons. Four years with present company. Desires change. Address: Box 81, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Ga.

FOR SALE:—Small fertilizer mixing plant in Southern New Jersey, doing business direct with farmers in 30 mile radius. Established for 18 years. Has always shown good profit on small investment. Good reason for selling. Box #55, c/o Commercial Fertilizer, 75 Third St., N. W., Atlanta, Ga.

FERTILIZER FOR SALE: MIXED HIGH ANALYSIS FERTILIZER CAN BE MANUFACTURED UNDER PRIVATE LABEL FOR YOU. ALSO AVAILABLE MURIATE OF POTASH — AMMONIUM NITRATE — TRIPLE SUPERPHOSPHATE. BOX #50, c/o Commercial Fertilizer, 75 3rd St., N. W., Atlanta, Ga.

FOR SALE: Approximately 15,000 new 4-ply, open-mouth fertilizer bags consisting of 1-99 AL-2-50 1-50 AWK and of the 17 x 3 x 33 size. These bags are in good condition and will sell at a reasonable price. Box #54, Commercial Fertilizer, 75 Third St., N. W., Atlanta, Ga.

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BOOKS

Books and comment on books sent us recently include:

Principles of Agriculture, by W. R. Williams and G. V. Jacks, a well-rounded treatise on the revolutionary teachings of Russia's foremost soil scientist. 181 pages; Chemical Publishing Co., Inc. 212 Fifth Avenue, New York 10; $3.75.

Manures and Fertilizers, a simple written survey on the use of plant foods, intended to help the farmer better understand his soil and its needs. Chemical Publishing, see above; $2.50.

* * *

Agronomy published by Academic Press, 125 East 23rd Street, New York 10; Volume 1 to 5 available, at $8.50 each. And a series of monographs, 1 to 4: 1. C. Edmund Marshall on Colloid Chemistry of Silicate Materials, $5.80; 2. Byron T. Shaw, Soil Physical Conditions and Plant Growth, $8.80; 3. K. D. Jacob, Fertilizer Technology and Resources in the U. S., about $9; W. H. Pierre, Soil and Fertilizer Phosphorus in Crop Nutrition, in preparation.

* * *

Pasture Production and Management, R. H. Lush, University of Tennessee, published by Blakiston, 575 Madison Avenue, New York 22, $3.75. This book, published in 1952 has been well received throughout the U. S. and in many foreign countries and comments we have seen concerning it are excellent.

It is full of fine information on pasture, as it has condensed everything about pasture in a small amount of space so that it is a very rich less than two hundred pages on Pasture Production and Management.

MAP

(Continued from page 59)

Sind, and will distribute 27,000 tons of ammonium sulphate fertilizers through these points. And a campaign has been launched to make sure that every bag of ammonium sulphate arriving in Punjab will be correctly used. A shortage of wagon supply has made it necessary to rule that not less than three tons may be ordered when the intention is to ship by road.

ITALY

With three large nitrate fertilizer plants in operation, Italy not only is covering its own needs, but looks to become a contender in the world market.

IM&M Film Available

Any of our readers wishing to put on a 27-minute show before business, professional or educational groups, or for purposes of public information concerning the fertilizer industry, will find useful the film "Up From the Bed of a Desert Sea" which has been produced by the staff of the potash division, International Minerals & Chemical Corporation.

The film is 16 mm in full color with sound, and tells the story of the mining and refining of muriate of potash, sulfate of potash, and Sul-Po-Nag from the ore face to the finished product. Produced at their desert plant near Carlsbad, New Mexico, the film takes the viewer on a picture tour of the mining operation, 900 feet beneath the surface, and visits the modern potash refinery on the desert floor.

If you are interested, write the Potash Division, IM&M, 20 North Wacker Drive, Chicago 6, Illinois.

W. R. Grace Buys Big Building

W. R. Grace & Co. has purchased and will occupy a portion of the 24-story New York Cotton Exchange Building in New York. It contains nearly 200,000 square feet of rentable area.

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Without fertilizer, the constant high production on our nation's farms would be impossible. Feeding hungry people the world over makes soil improvement a necessity.

The unexcelled red muriate produced by Potash Company of America is a major contribution to the fertilizer industry.

POTASH COMPANY OF AMERICA

Carlsbad, New Mexico

General Sales Office . . . 1625 Eye Street, N.W., Washington, D. C.
Midwestern Sales Office . . . First National Bank Bldg., Peoria, Ill.
Southern Sales Office . . . Candler Building, Atlanta, Ga.

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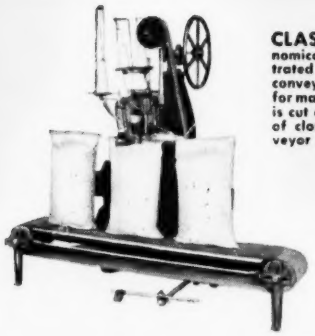
NO two jobs are exactly alike — that's why Union Special builds a wide variety of bag closing equipment. In the Union Special line you will find machines for closing all sizes and kinds of bags from small textile or paper bags of one pound, or less, up to the largest multiwall paper bags in use today. Whether your production schedule calls for closing just a few bags or for high continuous output, Union Special can supply the equipment to do the work efficiently, economically, dependably!

Coupled with a complete line of equipment is Union Special's vast background of experience and technical know-how that insures customers of getting THE RIGHT MACHINE FOR THE JOB!

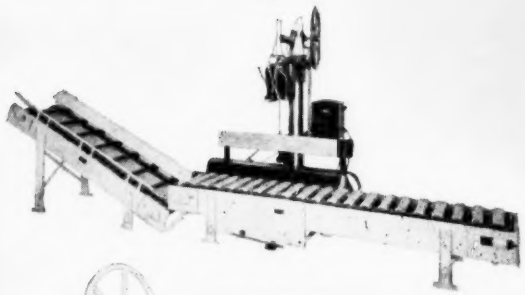
Union Special representatives located in all leading industrial centers are qualified by experience and training to give you expert recommendations. Take advantage of the service they offer.

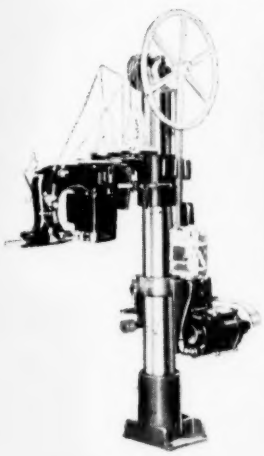
Ask for recommendations. UNION SPECIAL MACHINE CO., 412 North Franklin St., Chicago 10, Illinois.

Send for Bulletin 200



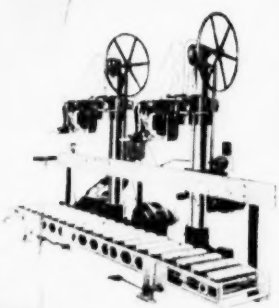
CLASS 21800 *(left)* **for fast, economical closing of paper bags. Illustrated is Style 21800 H with 5 ft. conveyor and 80600 H sewing head for making tape bound closure. Tape is cut off automatically at each end of closure. Sewing head and conveyor adjustable vertically.**





CLASS 20500 *(above)* **machines are heavy duty, high production units for closing medium and heavy weight bags. Available with power-driven horizontal conveyor, inclined conveyor, or both; or with conveyor transmission unit only, for plant production line.**

STYLE 20100 H *(left)*, **is a heavy duty, high production column type machine designed for use with plant conveyor systems. Sewing head is pedal controlled.**



DUPLEX MACHINES *(right)* **are designed for closing double bags. The first sewing head closes the inner bag; the second closes either the outer bag alone, or both bags together for extra safety. Also recommended for single closures where continuous operation is a must — operator can instantly switch to other head.**

Union Special

BAG CLOSING MACHINES